Architects Specifications for

CAREY BUILDING MATERIALS

Please Note:

(1) This book of Architects Specifications for Carey Building Materials has been made in conformance with the specifications set forth by The American Institute of Architects.

(2) The removal of the fasteners will release seven different bulletins making it possible to file the information under these classifications:

——Carey Flexible Cement Roofing.
——Carey Asfaltslate Shingles.
——Carey Ceil-Board.
——Carey Rubber Roofings.
——Carey Elastite Expansion Joint.
——Carey Percoproof and Fibrewove Insulating Paper.
——Carey Magnesia and Asbestos Insulating Products.

(3) A Filing Index is carried in the upper left-hand corner of the first page of each section.

THE PHILIP CAREY COMPANY

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CAREY BUILDING MATERIALS:
CAREY FLEXIBLE CEMENT ROOFING

THE EFFICIENT CAREY FACTORIES

Upper Panel Shows Factories, Lockland, Cincinnati, O., where Carey Flexible Cement Roofing and Two Hundred Carey Products are Manufactured.

Lower Panel Shows Carey Magnesia Plant, Plymouth Meeting, Pa.

Carey Flexible Cement Roofing

A Solid, Compact and Indivisible Sheet of Roofing

ABSOLUTELY WATERPROOF. FIRE AND WEATHER-RESISTING.

Carey Flexible Cement Roofing is made in uniform grade and quality. Its standardized construction and composition never change. Its foundation consists of a wool felt, manufactured from the best grade of stock and saturated so as to render it waterproof and permanently flexible. The heavy body of asphalt cement — which is a most durable and suitable cement composition for roofing purposes—is laid over the felt foundation. This composition is tempered and treated so that it maintains its elasticity and cannot dry out, crack or break. The secret of the success and prolonged life of Carey Flexible Cement Roofing is the fact that this body (its very life) is maintained in its original state indefinitely, being protected by the reinforcement on either side, which forms a surface impenetrable by the elements.

SAMPLE showing construction of Carey Flexible Cement Roofing

The top reinforcement consists of a strong Calcutta burlap embedded into the Asphalt composition, giving great tensile strength to the roofing sheet.

SIZE OF SHEETS.—Carey Roofing is furnished in sheets 36 feet in length and 36 inches wide, or 108 square feet — one roll, or square, the extra eight feet allowing for the necessary lap of two inches. This will cover 100 square feet, surface measure, when laid on the building.

WEIGHT.—The weight of Carey Flexible Cement Roofing, without any completing materials, is approximately seventy-five (75) pounds per square.

Carey Flexible Cement Roofing was placed on the market in 1885. Since that time it has been extensively used on buildings of every description, in all climates, proving by actual time test the most practical and durable type of roofing ever produced.

Where there are fumes, gases, etc., to contend with, such as are found in fertilizer plants, round-houses, gas work, acid plants, etc., see Carey Built-up Specification Roofs. Write for sample and complete information.

Municipal Pier No. 2, Chicago, roofed with 400,000 square feet Carey Flexible Cement Roofing.

Carey Flexible Cement Roofing

Application of Carey Flexible Cement Roofing, Style "B"

(OVER WOOD SHEATHING)

See Specification Style "B" on opposite page.

Adaptability.—Carey Flexible Cement Roofing Style "B" is used almost exclusively in our own contract work with Carey Manco Asphalt Cement for cementing the laps and mopping the top surface. This style of Carey Roofing also provides for the use of Carey Magnesia Paint for finishing the top surface where users apply the roofing themselves and have not the facilities for heating the Manco. When the paint finish is preferred, the style of roofing is designated as Carey Flexible Cement Roofing Style "C."

Either Style "B" or "C" Carey Roofing is adapted to buildings of every description — flat or steep surfaces, with the exception that we recommend where the roof is to be exposed to fumes, gases or other severe conditions, that Carey Roofing be underlined with Fiberock Felt. See Built-up Specifications.

Carey Flexible Cement Roofing

Specification for Style "B"

(OVER WOOD SHEATHING)

ABBREVIATED SPECIFICATION

ROOFING—To be Carey Flexible Cement Roofing Style "B," applied in accordance with manufacturers' complete Specification for wood sheathing surface.

WORK PROPOSED.—This specification contemplates furnishing all material and labor required to apply the roofing and base flashing and line the gutters. (No metal work included.)

Remove, or hammer down, all projecting nail heads; cover all knot holes, etc., in the sheathing and sweep the sheathing clean before the roofing is applied. Sheathing must be dry before applying the roofing.

MATERIALS.—The materials used in the construction of this roof shall be as follows:

(a) Carey Flexible Cement Roofing, Style "B" ..... 75 pounds per square
(b) Carey Manco Asphalt Cement ..... 30 pounds per square
(c) 1-inch Large Head Roofing Nails ..... 1¼ pounds per square

Weight per square, when applied, to be approximately 106¼ pounds.

APPLICATION.—The roof surface shall be covered with Carey Flexible Cement Roofing, lapping the sheets two inches at the joints and four inches at the cross seams, and cementing between the sheets at the joints and cross seams with Carey Manco Asphalt Cement.

Roofing sheets shall be nailed at the joints and cross seams with large head roofing nails, to be driven not more than two inches apart. Care should be taken to avoid driving nails in cracks or knot holes.

The Patent Lap shall be securely cemented down over all joints and nail heads with Carey Manco Asphalt Cement. No nail heads must be left exposed.

Roofing sheets shall be laid crosswise of the sheathing boards.

GUTTERS AND VALLEYS.—First line with a single sheet of saturated felt, mopping the same in solid, then mop in solid over the felt, a full length sheet of roofing cut to a width of not over 18 inches. Lay the sheets lengthwise with the valley or gutter so that joins will not occur in the center. All gutter and valley sheets to be applied as specified under "Application."

NOTE.—All concrete or brick walls to be flashed, must first be primed to a height of six inches with Carey Asphalt Primer.

FLASHING.—The roofing sheets shall be cut so that they will extend up on all fire-walls, skylights, curbs, chimneys and other vertical surfaces to a height of three inches. This extension not to be fastened to the vertical surface. A sheet of Carey Roofing, full length, and cut to a width of nine inches, to be applied along the vertical surface, extending three inches on the roof proper and six inches on the wall, being securely cemented and nailed to the roof surface and to the nailing strip in the fire-wall.

COUNTERFLASHING.—See under "Notice to Owner or Contractor."

ROOF FINISH.—The entire surface of the roofing applied shall be mopped with Carey Manco Asphalt Cement, applied hot, and evenly spread to a uniform finish.

NOTE. If Magnesia Paint Finish is preferred to Manco Asphalt Cement, specify Carey Flexible Cement Roofing, Style "C," which specification is the same as above excepting the following changes.

MATERIALS.—The materials used in the construction of this roof shall be as follows:

(a) Carey Flexible Cement Roofing, Style "C" ..... 75 pounds per square
(b) Carey Magnesia Paint (1 gallon) ..... 11 pounds per square
(c) Carey Manco Asphalt Cement ..... 6 pounds per square
(d) 1-inch Large Head Roofing Nails ..... 1¼ pounds per square

Weight per square, when applied, to be approximately 93 pounds.

ROOF FINISH.—The entire surface of the roofing applied shall be coated with Carey Magnesia Paint, evenly spread to a uniform finish.

NOTICE TO OWNER OR CONTRACTOR.

Roof surface is to be prepared and made ready for us for the application of Carey Roofing with dry seasoned sheathing boards of uniform thickness, closely laid. On permanent buildings, tongue and grooved sheathing, six to eight inches wide, is recommended. All sheathing boards to be surface nailed with at least two nails to each purlin in addition to any blind nailing. Sheathing boards to be placed on building horizontally.

Counterflash all walls with No. 26 gauge galvanized iron, or if preferred, copper may be used. The counterflashing to be firmly attached to wall with suitable plugs and Portland cement. If furnished by the roofing contractor, both material and labor of installation shall be charged to the acceptor of this proposal as an extra, unless otherwise specifically stated in proposal.

Fisher Flouring Mills, Seattle, Washington, roofed with Carey Flexible Cement Roofing.

Carey Flexible Cement Roofing

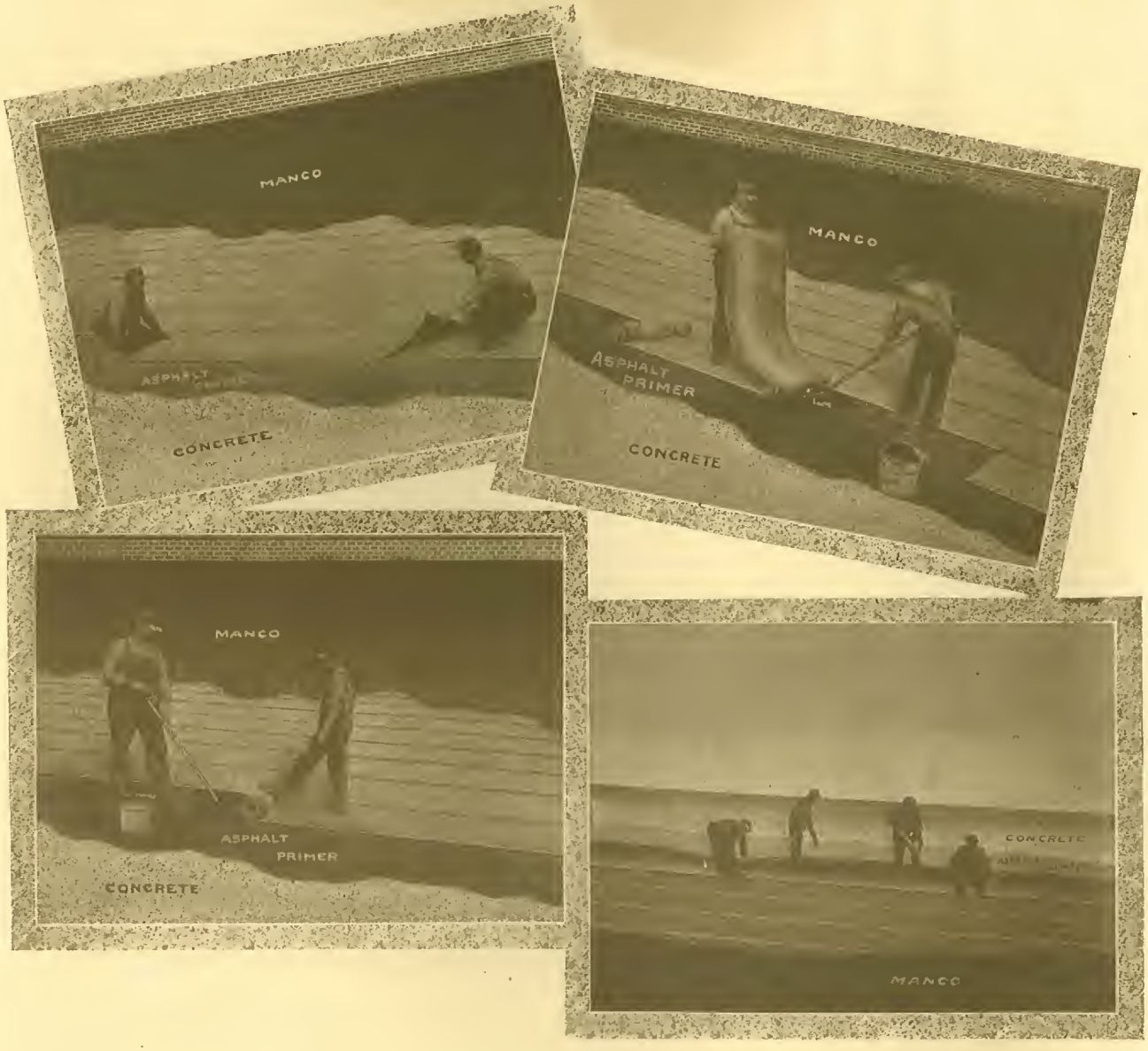


ILLUSTRATION No. 1—Placing sheet of roofing in position before cementing same to concrete.

ILLUSTRATION No. 2.—After the sheet is placed in the exact position, it is then rolled from one end for two-thirds of its length as shown in illustration. When rolling, care must be used to prevent the sheet from slipping out of position. The remaining one-third of sheet is then cemented securely to concrete.

ILLUSTRATION No. 3.—After the one-third length of sheet is cemented in place, the two-thirds end is gradually unrolled back into its position in the hot cement.

ILLUSTRATION No. 4.—Shows another method of applying roofing sheets to concrete. Before cementing, lay the sheet of roofing in position, the edge lapped two inches on adjoining sheet. The workmen then pull up half the sheet, standing on the other half, as shown in the illustration, and the moppers start at the center pushing the mops to the end, leaving a continuous mopping of cement for the width of the mop the entire length of the sheet. The workmen then let the sheet down into this strip of hot cement, allowing the center of the sheet to drop first. This same operation is repeated until the entire one-half side of the sheet is cemented securely to the concrete. The workmen then hold up the other side of sheet and repeat the mopping. Sufficient men should be employed so that the roofing sheet can be handled without damaging same.

Both methods, as shown in illustrations, are successfully used in applying roofing to concrete or tile.

Carey Flexible Cement Roofing

Specification for Style "B"

(OVER CONCRETE)

ABBREVIATED SPECIFICATION

ROOFING—To be Carey Flexible Cement Roofing Style "B," applied in accordance with manufacturers' complete Specification for concrete surface.

WORK PROPOSED.—This specification contemplates furnishing all material and labor required to apply the roofing and base flashing and line the gutters. (No metal work included.)

The concrete surface must be thoroughly dry and swept clean before the roofing is applied.

MATERIALS.—The materials used in the construction of this roof shall be as follows:

(a) Carey Asphalt Primer (1 gallon)..... 9 pounds per square
(b) Carey Manco Asphalt Cement.....50 pounds per square
(c) Carey Flexible Cement Roofing, Style "B".....75 pounds per square
(d) Carey Manco Asphalt Cement.....30 pounds per square

Weight per square, when applied, to be approximately 164 pounds.

APPLICATION.—The concrete shall be coated with Carey Asphalt Primer, applied cold and thoroughly brushed in.

This surface shall be thoroughly mopped with Carey Manco Asphalt Cement, into which, while hot, embed Carey Flexible Cement Roofing, lapping the sheets two inches at the joints and four inches at the cross seams, and cementing between the sheets at the joints and cross seams with Carey Manco Asphalt Cement.

The Patent Lap shall be securely cemented down over all joints with Carey Manco Asphalt Cement.

Roofing sheets shall be laid with the slope of the roof.

GUTTERS AND VALLEYS.—First line with a single sheet of saturated felt mopping the same in solid, then mop in solid over the felt, a full length sheet of roofing cut to a width of not over 18 inches. Lay the sheets lengthwise with the valley or gutter so that joins will not occur in the center. All gutter and valley sheets to be applied as specified under "Application."

NOTE.—All concrete or brick walls to be flashed, must first be primed to a height of six inches with Carey Asphalt Primer.

FLASHING.—The roofing sheets shall be cut so that they will extend up on all fire-walls, skylights, curbs, chimneys and other vertical surfaces to a height of three inches. This extension to be cemented to the vertical surface. A sheet of Carey Roofing, full length, and cut to a width of nine inches shall be applied along the vertical surface, extending three inches on the roof proper, and six inches on the wall; being securely cemented to the roof surface and cemented and nailed to the nailing strip in the fire-wall.

COUNTERFLASHING.—See under "Notice to Owner or Contractor."

ROOF FINISH.—The entire surface of the roofing applied shall be mopped with Carey Manco Asphalt Cement, applied hot, and evenly spread to a uniform finish.

NOTE. If Magnesia Paint Finish is preferred to Manco Asphalt Cement Finish, specify Carey Flexible Cement Roofing, Style "C," which specification is the same as above excepting the following changes.

MATERIAL.—The materials used in the construction of this roof shall be as follows:

(a) Carey Asphalt Primer (1 gallon)..... 9 pounds per square
(b) Carey Manco Asphalt Cement.....50 pounds per square
(c) Carey Flexible Cement Roofing, Style "C".....75 pounds per square
(d) Carey Magnesia Paint (1 gallon).....11 pounds per square

Weight per square, when applied, to be approximately 145 pounds.

ROOF FINISH.—The entire surface of the roofing applied shall be coated with Carey Magnesia Paint, evenly spread to a uniform finish.

NOTICE TO OWNER OR CONTRACTOR

All concrete surfaces shall be prepared for us for the application of Carey Roofing with a comparatively smooth, hard finish, free from holes and loose particles of sand and cement, and the expense of rectifying any extensive irregularities, such as depressions in the plane of the roof surface, which must be filled, shall be chargeable to the acceptor of our proposal.

All sharp angles to be rounded out so as to avoid rough or sharp edges. On steep surfaces provision shall be made for anchoring the roofing sheets, the anchor strip to consist of a wood strip embedded into the concrete surface at the ridge.

All down-spout openings must be prepared and the gutters properly graded by the cement contractor, so that water will not stand at any point.

Counterflash all walls with No. 26 gauge galvanized iron, or if preferred, copper may be used. The counterflashing to be firmly attached to wall with suitable plugs and Portland cement. If furnished by the roofing contractor, both material and labor of installation shall be charged to the acceptor of this proposal as an extra, unless otherwise specifically stated in proposal.

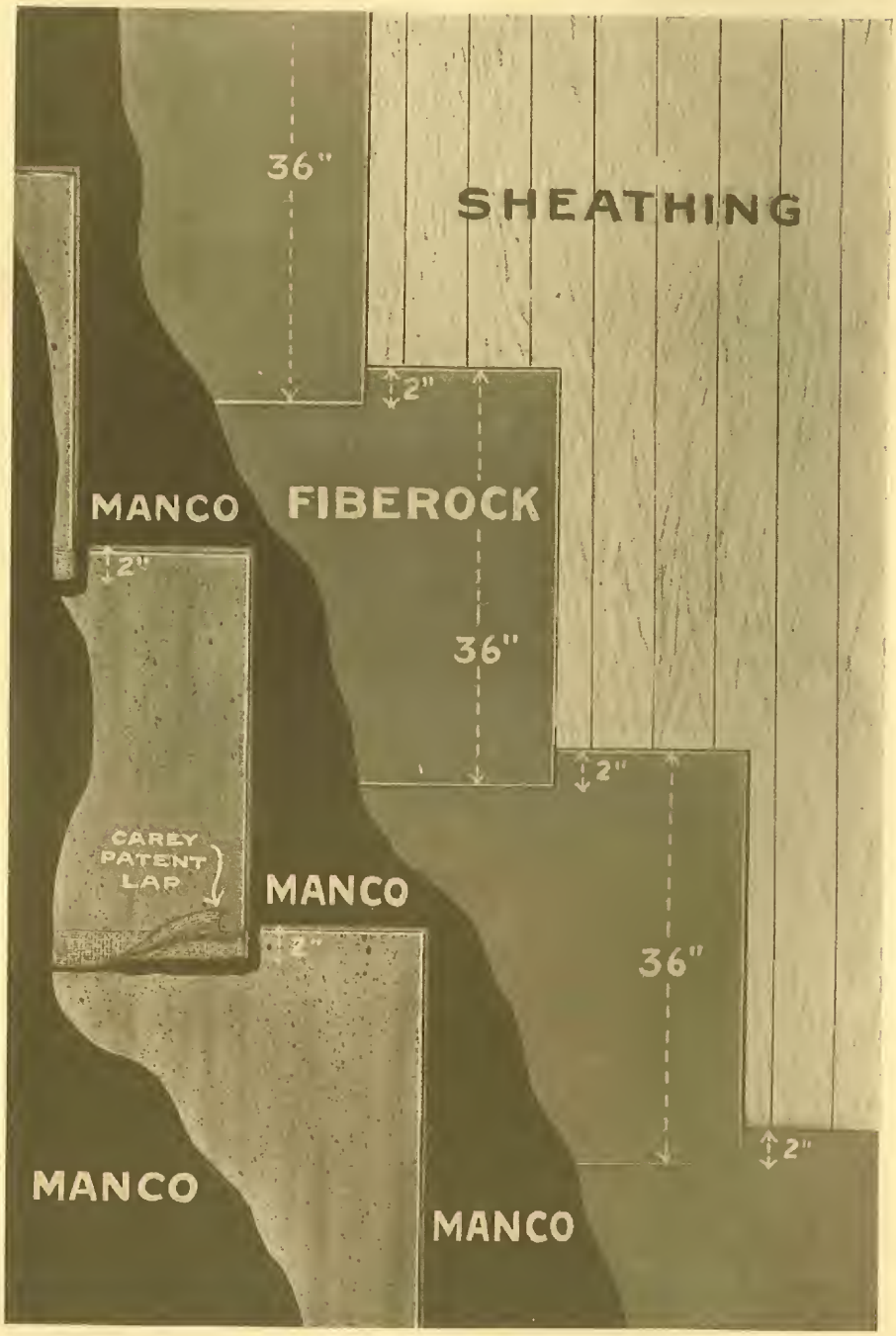
Butler Brothers, St. Louis, roofed with 100,000 square feet Carey Flexible Cement Roofing.

Carey Flexible Cement Roofing

Application of Carey Flexible Cement Roofing Specification No. 1

(5-PLY BUILT-UP OVER WOOD SHEATHING)

See Specification No. 1, on opposite page.



Adaptability.

This specification is for flat or steep surfaces. Recommended for use on any building with wood sheathing surface, particularly if the roof boards are not tongue and groove and on buildings where fumes, gases and other destructive agencies are prevalent and likely to penetrate between the cracks of the sheathing, attacking the roofing from the under side. Carey Fiberock Felt is a weather-resisting material, but is used under Carey Roofing as an added protection against gases, fumes, etc.

Carey Flexible Cement Roofing

Specification No. 1

(5-PLY BUILT-UP OVER WOOD SHEATHING)

WORK PROPOSED.—This specification contemplates furnishing all material and labor required to apply the roofing and base flashing, and line the gutters. (No metal work included.)

Remove, or hammer down, all projecting nail heads, cover all knot holes, etc., in the sheathing, and sweep the sheathing clean before the roofing is applied.

Sheathing must be dry before applying the roofing.

MATERIALS.—The materials used in the construction of this roof shall be as follows:

(a)	Carey Fiberock Felt	15	pounds per square
(b)	Carey Manco Asphalt Cement	25	pounds per square
(c)	Carey Flexible Cement Roofing, Style "B"	75	pounds per square
(d)	Carey Manco Asphalt Cement	30	pounds per square
(e)	1¼-inch Large Head Roofing Nails	1½	pounds per square

Weight per square, when applied, to be approximately 146½ pounds.

ABBREVIATED SPECIFICATION

ROOFING—To be Carey Flexible Cement Roofing built-up Specification No. 1, applied in accordance with manufacturer's complete Specification for wood sheathing surface.

APPLICATION.—The roof surface shall be covered with one layer of Carey Fiberock. All sheets to be lapped two inches and nailed sufficiently along the joints to hold them in place.

The entire Fiberock surface shall be mopped with Carey Manco Asphalt Cement, applied hot.

This surface shall be covered with Carey Flexible Cement Roofing, lapping the sheets two inches at the joints and four inches at the cross seams, and cementing between the sheets at the joints and cross seams with Carey Manco Asphalt Cement.

Roofing sheets shall be nailed at the joints and cross seams with large head roofing nails, to be driven not more than two inches apart. Care should be taken to avoid driving nails in cracks and knot holes.

The Patent Lap shall be securely cemented down over all joints and nail heads with Carey Manco Asphalt Cement. No nail heads must be left exposed.

Roofing sheets shall be laid crosswise of the sheathing boards.

GUTTERS.—Apply one layer of Carey Fiberock Felt the full length of the gutter. This felt to be covered with Carey Flexible Cement Roofing, cut to a width of 18 inches, mopped in solid.

Lay all sheets lengthwise with the gutter or valley so that joints will not occur in the center, using full length sheets as far as possible. All gutter sheets are to be applied as specified under "Application."

NOTE.—All concrete or brick walls to be flashed, must first be primed to a height of six inches with Carey Asphalt Primer.

FLASHING.—The roofing sheets shall be cut so that they will extend up on all fire-walls, skylights, curbs, chimneys and other vertical surfaces to a height of three inches. This extension not to be fastened to the vertical surface. A sheet of Carey Roofing, full length, and cut to a width of nine inches, to be applied along the vertical surface, extending three inches on the roof proper, and six inches on the wall; being securely cemented and nailed to the roof surface, and to the nailing strip in the fire-wall.

COUNTERFLASHING.—See under "Notice to Owner or Contractor."

ROOF FINISH.—The entire surface of the roofing applied shall be mopped with Carey Manco Asphalt Cement, applied hot, and evenly spread to a uniform finish.

NOTICE TO OWNER OR CONTRACTOR

Roof surface is to be prepared and made ready for us for the application of Carey Roofing with dry seasoned sheathing boards of uniform thickness, closely laid. On permanent building, tongue and grooved sheathing, six to eight inches wide, is recommended. All sheathing boards to be surface nailed with at least two nails to each purlin in addition to any blind nailing. Sheathing boards to be placed on building horizontally.

Counterflash all walls with No. 26 gauge galvanized iron, or if preferred, copper may be used. The counterflashing to be firmly attached to wall with suitable plugs and Portland cement. If furnished by the roofing contractor, both material and labor of installation shall be charged to the acceptor of this proposal as an extra, unless otherwise specifically stated in proposal.

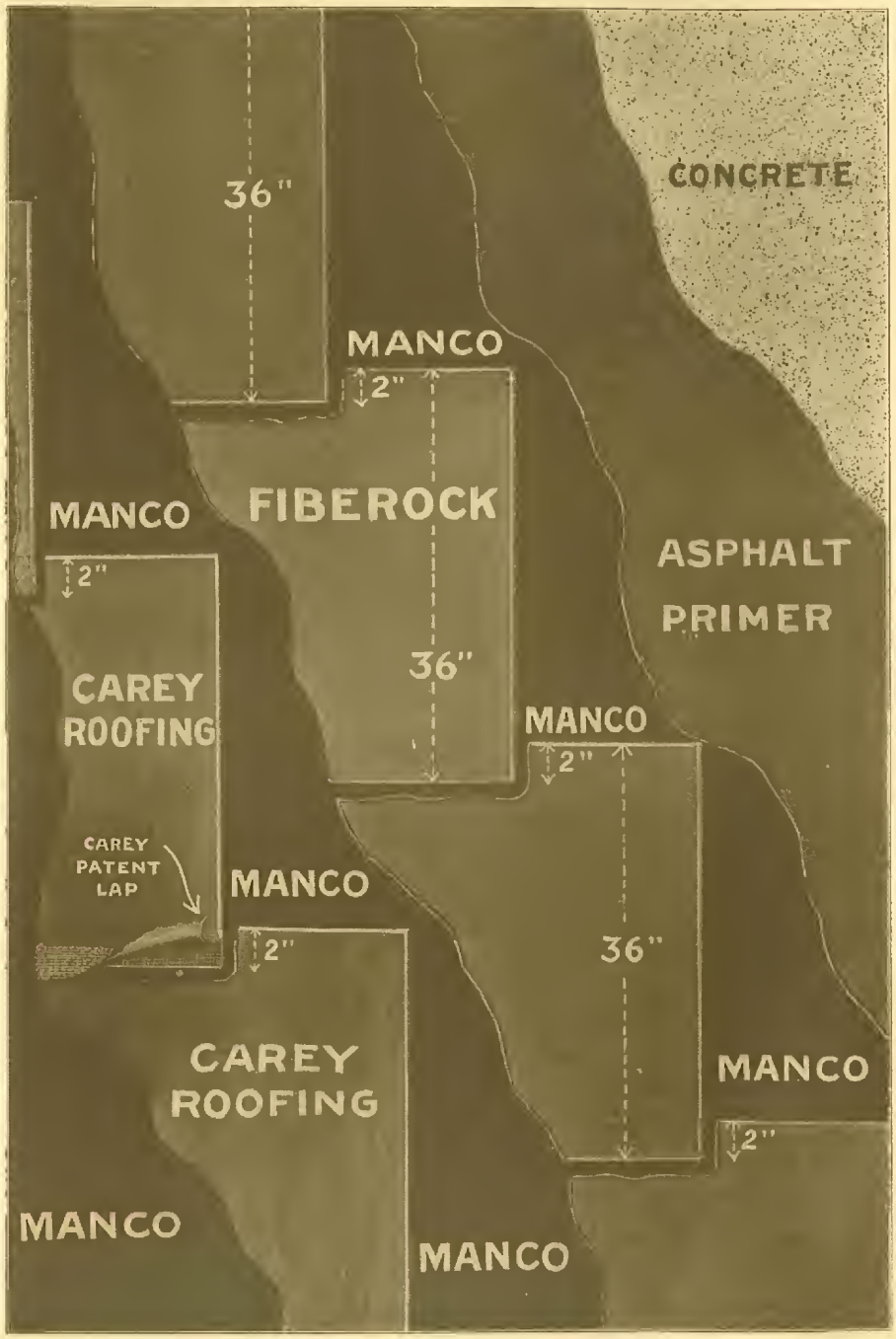
Grand Trunk Central Station, Ottawa, Canada, roofed with Carey Flexible Cement Roofing.

Carey Flexible Cement Roofing

Application of Carey Flexible Cement Roofing Specification No. 2

(5-PLY BUILT-UP OVER CONCRETE)

See Specification No. 2, on opposite page.



Adaptability.

We recommend this specification for flat or steep surfaces and for use over concrete or tile, particularly for the saw-tooth type of construction, where the customer desires a roof of heavier construction than the regular Carey Roofing provides.

Carey Flexible Cement Roofing

Specification No. 2

(5-PLY BUILT-UP OVER CONCRETE)

WORK PROPOSED.—This specification contemplates furnishing all material and labor required to apply the roofing and base flashing and line the gutters. (No metal work included.)

The concrete surface must be thoroughly dry and swept clean before the roofing is applied.

MATERIALS.—The materials used in the construction of this roof shall be as follows:

(a)	Carey Asphalt Primer (1 gallon)	9 pounds per square
(b)	Carey Manco Asphalt Cement	50 pounds per square
(c)	Carey Fiberock Felt	15 pounds per square
(d)	Carey Manco Asphalt Cement	25 pounds per square
(e)	Carey Contract Roofing, Style "B"	75 pounds per square
(f)	Carey Manco Asphalt Cement	30 pounds per square

Weight per square, when applied, to be approximately 204 pounds.

ABBREVIATED SPECIFICATION

ROOFING—To be Carey Flexible Cement Roofing built-up Specification No. 2, applied in accordance with manufacturers' complete Specification for concrete surface.

APPLICATION.—The concrete shall be coated with Carey Asphalt Primer applied cold and thoroughly brushed in.

This surface shall be mopped with Carey Manco Asphalt Cement into which, while hot, embed one layer of Carey Fiberock Felt, lapping the sheets two inches.

The entire Fiberock surface shall be mopped with Carey Manco Asphalt Cement, into which, while hot, embed Carey Flexible Cement Roofing, lapping the sheets two inches at the joints and four inches at the cross seams and cementing between the sheets at the joints and cross seams with Carey Manco Asphalt Cement, the roofing sheets to be so laid that the joints or laps will occur at the center of the Fiberock sheets.

The Patent Lap shall be securely cemented down over all joints with Carey Manco Asphalt Cement.

Roofing sheets shall be laid with the slope of the roof.

GUTTERS.—Apply one layer of Carey Fiberock Felt the full length of the gutter, this felt to be covered with Carey Flexible Cement Roofing cut to a width of 18 inches, mopped in solid.

Lay all sheets lengthwise with the gutter or valley so that joints will not occur in the center, using full length sheets as far as possible. All gutter sheets are to be applied as specified under "Application."

NOTE.—All concrete or brick walls to be flashed, must first be primed to a height of six inches with Carey Asphalt Primer.

FLASHING.—The roofing sheets shall be cut so that they will extend up on all fire-walls, skylights, curbs, chimneys and other vertical surfaces to a height of three inches. This extension to be cemented to the vertical surface. A sheet of Carey Roofing, full length and cut to a width of nine inches shall be applied along the vertical surface, extending three inches on the roof proper and six inches on the wall, being securely cemented to the roof surface and cemented and nailed to the fire-wall.

COUNTERFLASHING.—See under "Notice to Owner or Contractor."

ROOF FINISH.—The entire surface of the roofing applied shall be mopped with Carey Manco Asphalt Cement, applied hot, and evenly spread to a uniform finish.

NOTICE TO OWNER OR CONTRACTOR.

All concrete surfaces shall be prepared for us for the application of Carey Roofing with a comparatively smooth, hard finish, free from holes and loose particles of sand and cement, and the expense of rectifying any extensive irregularities, such as depressions in the plane of the roof surface, which must be filled, shall be chargeable to the acceptor of our proposal.

All sharp angles to be rounded out so as to avoid rough or sharp edges.

On steep surfaces, provision should be made for anchoring the roofing sheets, the anchor strip to consist of a wood strip embedded into the concrete surface at the ridge.

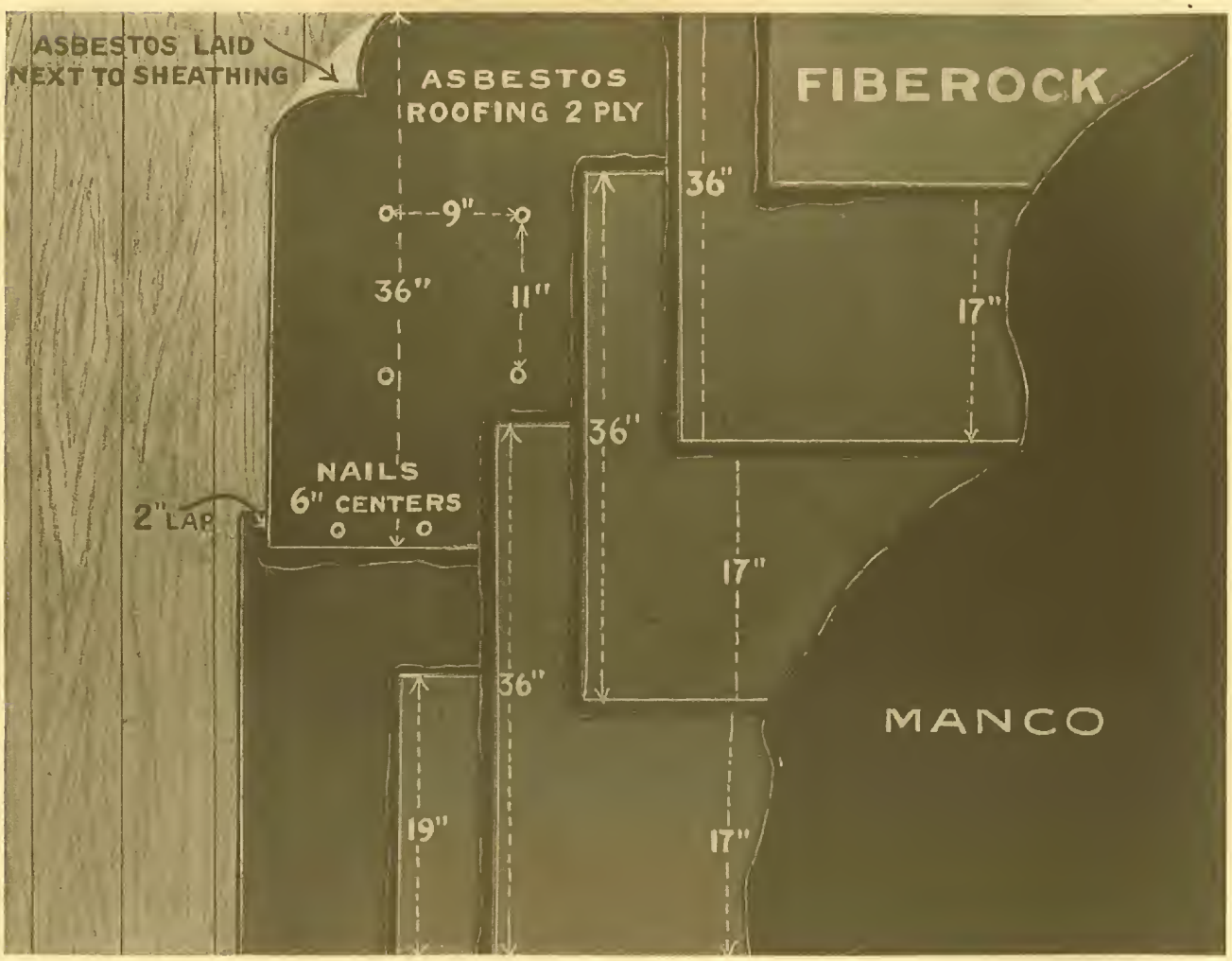
All down-spout openings must be prepared and the gutters properly graded by the cement contractor, so that water will not stand at any point. Counterflash all walls with No. 26 gauge galvanized iron, or if preferred, copper may be used. The counterflashing to be firmly attached to wall with suitable plugs and Portland cement. If furnished by the roofing contractor, both material and labor of installation shall be charged to the acceptor of this proposal as an extra, unless otherwise specifically stated in proposal.

Thomas A. Edison, Inc., Orange, N. J., roofed with Carey Flexible Cement Roofing.

Carey Asbestos Built-up Roofing

Application of Asbestos Roof Specification No. 3

(4-PLY ASBESTOS BUILT-UP OVER WOOD SHEATHING)



See Specification No. 3 on opposite page.

Adaptability.—This specification is prepared to meet the requirements of roofing constructed of Asbestos sheets. It can be applied on either flat or steep surfaces.

Carey Asbestos Built-up Roofing

Specification No. 3

(4-PLY ASBESTOS BUILT-UP OVER WOOD SHEATHING)

WORK PROPOSED.—This specification contemplates furnishing all material and labor required to apply the roofing and base flashing, and line the gutters. (No metal work included.)

Remove, or hammer down, all projecting nail heads; cover all knot holes, etc., in the sheathing, and sweep the sheathing clean before the roofing is applied.

Sheathing must be dry before applying the roofing.

MATERIALS.—The materials used in the construction of this roof shall be as follows:

(a)	Carey Asbestos Roofing, 2 ply	40 pounds per square
(b)	Carey Manco Asphalt Cement	25 pounds per square
(c)	Carey Fiberock Felt	15 pounds per square
(d)	Carey Manco Asphalt Cement	25 pounds per square
(e)	Carey Fiberock Felt	15 pounds per square
(f)	Carey Manco Asphalt Cement	25 pounds per square
(g)	1¼-inch Large Head Roofing Nails	2 pounds per square

Weight per square, when applied, to be approximately 147 pounds.

ABBREVIATED SPECIFICATION

ROOFING—To be Carey Asbestos Roof Specification No. 3 (built-up 4-ply), applied in accordance with manufacturers' complete Specification for wood sheathing surface.

APPLICATION.—The roof surface shall be covered with Carey 2-ply Asbestos Roofing, laid with white side next to the sheathing boards, the sheets to be joined or lapped together not less than 2 inches, cementing between the joints and then nailing the sheets at the joints securely to the sheathing boards with nails and flat tin caps, spacing the nails on six-inch centers, with two additional rows of nails and caps eleven inches apart, and eleven inches from the edge of each sheet, spaced nine-inch centers. After the 2-ply Asbestos Roofing has been completed in accordance with the above instructions, proceed to cover the surface with two layers of Carey Fiberock (asphalt saturated asbestos felt), cementing solid between sheets, so that at no place shall felt touch felt; each sheet to overlap the previous sheet so that seventeen inches is left exposed, making a continuous two-ply built-up over two-ply Asbestos Roofing, or when completed, a four-ply Asbestos Built-up Roof.

All sheets shall be laid crosswise of the sheathing boards and so lapped that at no joint will one joint or cross seam occur upon another.

GUTTERS.—Line all gutters in the same manner as described under "Application," using sheets full length and cut to a width of not over 18 inches. After the 2-ply Asbestos Roofing has been nailed into position, then cement two sheets of Fiberock over the 2-ply Asbestos Roofing, breaking joints in the usual manner.

All gutter sheets shall extend on the roof surface sufficiently to be properly lapped with the main roofing sheets, all to be applied as specified under "Application."

NOTE.—All concrete or brick walls to be flashed must first be primed to a height of 6 inches with Carey Asphalt Primer.

FLASHING.—Cut all roofing sheets so that they will extend up on all vertical surfaces, such as fire-walls, skylights, etc., to a height of 3 inches; a flashing strip of 2-ply Asbestos Roofing, cut 12 inches wide, is then to be carefully fitted along the wall, extending 6 inches on the wall and 6 inches on the main roof surface, securely cementing and nailing thereto; the nail heads on the roof surface to be covered with a strip of Fiberock Felt cemented over same.

COUNTERFLASHING.—See under "Notice to Owner or Contractor."

ROOF FINISH.—The entire surface of the roofing applied shall be mopped with Carey Manco Asphalt Cement, applied hot, and evenly spread to a uniform finish.

NOTICE TO OWNER OR CONTRACTOR.

Roof surface is to be prepared and made ready for us for the application of Roofing with dry seasoned sheathing boards of uniform thickness, closely laid. On permanent buildings, tongue and grooved sheathing, six to eight inches wide, is recommended. All sheathing boards to be surface nailed with at least two nails to each purlin, in addition to any blind nailing. Sheathing boards to be placed on building horizontally.

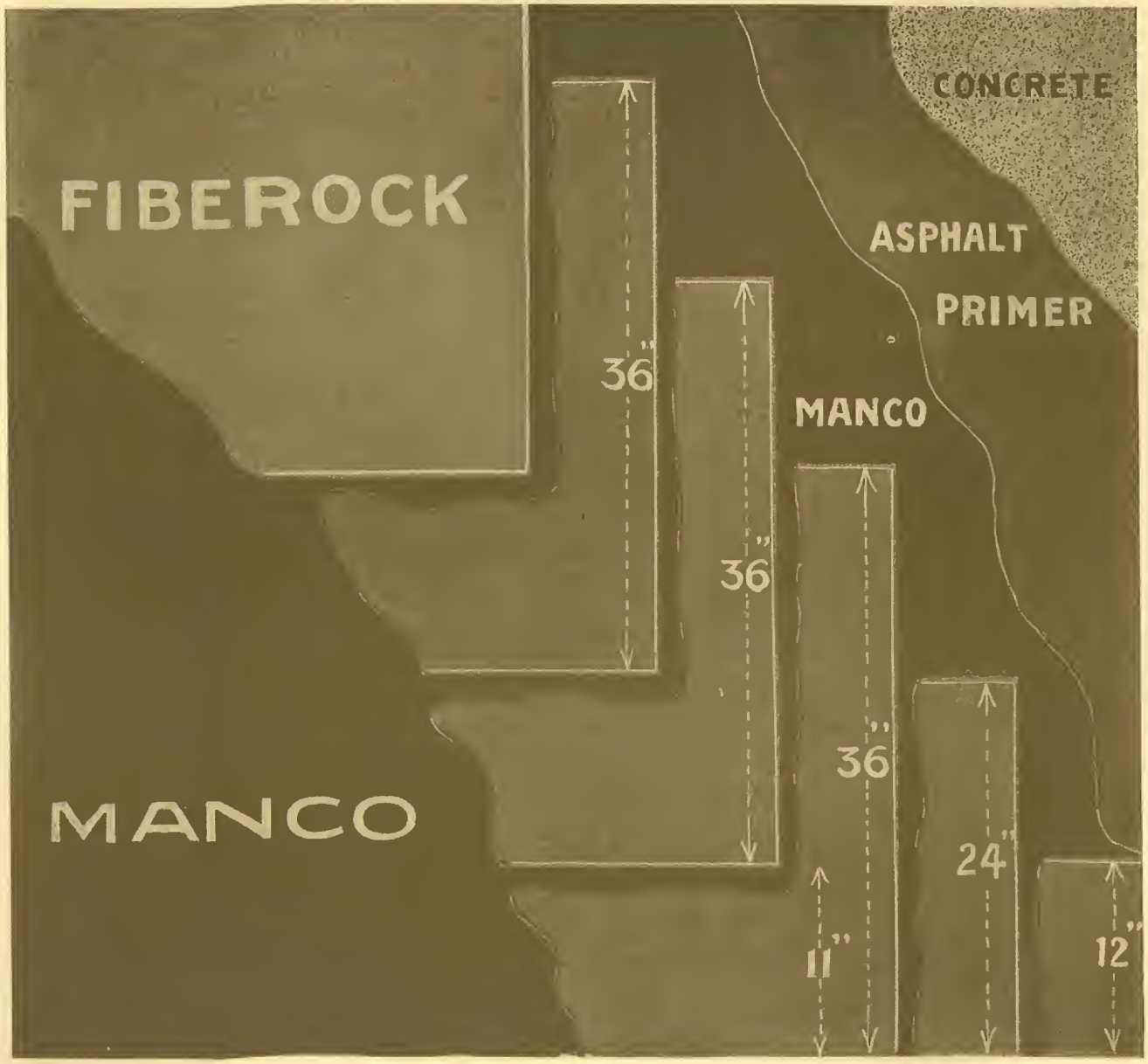
Counterflash all walls with No. 26 gauge galvanized iron, or if preferred, copper may be used. This counterflashing to be firmly attached to wall with suitable plugs and Portland cement. If furnished by the roofing contractor, both material and labor of installation shall be charged to the acceptor of this proposal as an extra, unless otherwise specifically stated in proposal.

Overland Factory, Minneapolis, Minn., roofed with Carey Asbestos Built-Up Roofing.

Carey Asbestos Built-up Roofing

Application of Asbestos Specification No. 4

(3-PLY ASBESTOS BUILT-UP OVER CONCRETE)



See Specification No. 4 on opposite page.

Adaptability.—This specification is prepared to meet the requirements of roofing constructed entirely of Asbestos sheets. It can be applied on either flat or steep surfaces.

Carey Asbestos Built-up Roofing

Specification No. 4

(3-PLY ASBESTOS BUILT-UP OVER CONCRETE)

WORK PROPOSED.—This specification contemplates furnishing all material and labor required to apply the roofing and base flashing and line the gutters. (No metal work included.)

The concrete surface must be thoroughly dry and swept clean before the roofing is applied.

MATERIALS.—The materials used in the construction of this roof shall be as follows:

(a)	Carey Asphalt Primer (1 gallon)	9 pounds per square
(b)	Carey Manco Asphalt Cement	50 pounds per square
(c)	Carey Fiberock Felt	15 pounds per square
(d)	Carey Manco Asphalt Cement	25 pounds per square
(e)	Carey Fiberock Felt	15 pounds per square
(f)	Carey Manco Asphalt Cement	25 pounds per square
(g)	Carey Fiberock Felt	15 pounds per square
(h)	Carey Manco Asphalt Cement	25 pounds per square

Weight per square, when applied, to be approximately 179 pounds.

ABBREVIATED SPECIFICATION

ROOFING—To be Carey Asbestos Roof Specification No. 4 (built-up 3-ply), applied in accordance with manufacturers' complete Specification for concrete surface.

APPLICATION.—The concrete shall be coated with Carey Asphalt Primer, applied cold, and thoroughly brushed in.

The surface shall be mopped with Carey Manco Asphalt Cement into which, while hot, embed three layers of Carey Fiberock (asphalt saturated asbestos felt), cementing solid between the sheets so that at no place shall felt touch felt; each sheet to overlap the previous sheet so that 11 inches are left exposed, making a continuous 3-ply.

GUTTERS.—Apply three layers of Carey Fiberock Felt lengthwise with the gutter. If possible, use sheets full length, cut to a width of not over 18 inches. Each sheet to overlap the previous sheet so that one-third of its length is left exposed.

All gutter sheets shall extend on the roof surface sufficiently to be properly lapped with the main roofing sheets and are to be applied as specified under "Application."

NOTE.—All concrete or brick walls to be flashed must first be primed to a height of six inches with Carey Asphalt Primer.

FLASHING.—The roofing sheets shall be cut so that they will extend up on all fire-walls, skylights, curbs, chimneys and other vertical surfaces to a height of three inches. This extension to be cemented to the vertical surface. A 12-inch flashing strip is to be applied along the vertical surface, extending six inches on the roof proper and six inches on the wall, being securely cemented to the roof surface and nailed and cemented to the nailing strip in the fire-wall.

COUNTERFLASHING.—See under "Notice to Owner or Contractor."

ROOF FINISH.—The entire surface of the roofing applied shall be mopped with Carey Manco Asphalt Cement, applied hot, and evenly spread to a uniform finish.

NOTICE TO OWNER OR CONTRACTOR.

All concrete surfaces shall be prepared for us for the application of Roofing, with a comparatively smooth, hard finish, free from holes and loose particles of sand and cement, and the expense of rectifying any extensive irregularities, such as depressions in the plane of the roof surface, which must be filled, shall be chargeable to the acceptor of our proposal.

All sharp angles to be rounded out so as to avoid rough or sharp edges. On steep surfaces, provision should be made for anchoring the roofing sheets, the anchor strip to consist of a wood strip embedded into the concrete surface at the ridge.

All down-spout openings must be prepared and the gutters properly graded by the cement contractor, so that water will not stand at any point.

Counterflash all walls with No. 26 gauge galvanized iron, or if preferred, copper may be used. The counterflashing to be firmly attached to wall with suitable plugs and Portland cement. If furnished by the roofing contractor, both material and labor of installation shall be charged to the acceptor of this proposal as an extra, unless otherwise specifically stated in proposal.

Chase Metal Works, Waterville, Conn., roofed with one million square feet Carey Flexible Cement Roofing.

THE CAREY PATENT LAP

is absolutely secure against wind and weather conditions. *It cannot leak* and is far stronger than necessary to resist any conditions that might arise.

No leaks or breaking away of joints can occur where Carey Flexible Cement Roofing is used.

CAREY *Asfaltslate* SHINGLES

THE ROOF BEAUTIFUL

The rapidly increasing objection to wood shingles because of their great fire risk, coupled with the growing scarcity of good timber has caused universal demand for an economical, attractive substitute. Slate and tile are too costly for any but the more elaborate buildings. Their weight and up-keep expense also make them impracticable for medium priced dwellings. Carey Asfaltslate Shingles cost less than slate or tile; require absolutely no upkeep expense, and will outlast wood shingles without their fire risk, and without the incidental expenses of painting and repairing. Carey Asfaltslate Shingles are built on a base of heavy wool felt, thoroughly saturated and coated with a waterproof asphalt compound, and finished with a heavy coating of crushed slate, in natural colors (red or green), which adheres firmly to the base and requires no attention after being applied. Specify Carey Asfaltslate Shingles, as they combine beauty, durability, and economy.

Approved by Underwriters Laboratories, Inc., Chicago,
under the direction of the National Board of Fire Underwriters.

Bungalow designed and built by Robert Fuerst, leading contractor and builder of Cincinnati, Ohio.
Built near Cincinnati's famous Zoological Gardens, at a cost of $11,000.

Carey Asfaltslate Shingles

The growing scarcity of good lumber, with a constantly increasing legislation against the use of wood shingles in cities, on account of fire risks, has created a very strong demand for a good, medium priced substitute. Tile and slate shingles are too expensive for the average home, and the up-keep cost is too great for any but the more elaborate buildings. Asfaltslate Shingles, at a moderate price, and with no expense for up-keep are growing rapidly in popularity wherever introduced.

The natural colors, red and green, make these shingles especially desirable for roofs on cottages, bungalows and other buildings, where a color scheme is to be carried out, or an attractive effect is desired.

A roof of Carey Asfaltslate Shingles is attractive and beautiful, and fire-resisting to a very large degree.

Approved by Underwriters Laboratories, Inc., Chicago,
under the direction of the National Board of Fire Underwriters.

The above designs show a few of the artistic ideas which can be carried out in the red and green shingles. These designs can be elaborated on in many ways, and very attractive effects secured thereby.

Carey Asfaltslate Shingles

Sectional view of Carey Asfaltslate Shingles.

Carey Asfaltslate Shingles are built on a base of felt, containing the exact percentage of wool necessary to give it the highest tensile strength, with the greatest saturating capacity.

This wool felt is thoroughly saturated and heavily coated with pure Gilsonite Asphalt. Into this asphalt, at the proper temperature, is embedded, under heavy pressure, a coat of crushed slate in natural colors, red or green. These colors are permanent, therefore never require paint. The shingles are standard size, 8 x 12¾ inches.

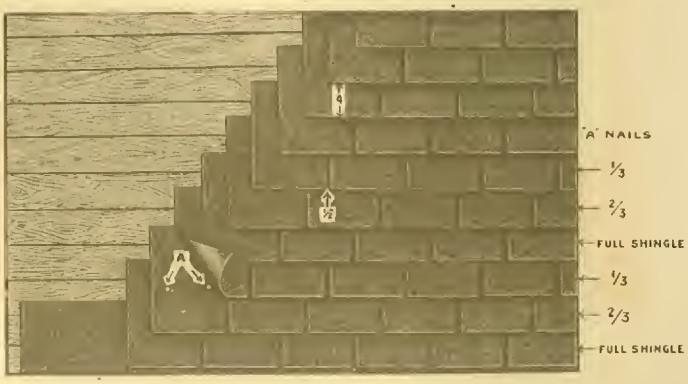
SPECIFICATIONS

ROOFING — The Roofing shall be of Carey Asfaltslate Shingles, applied according to instructions of the manufacturer.

Instructions for Applying Carey Asfaltslate Shingles.

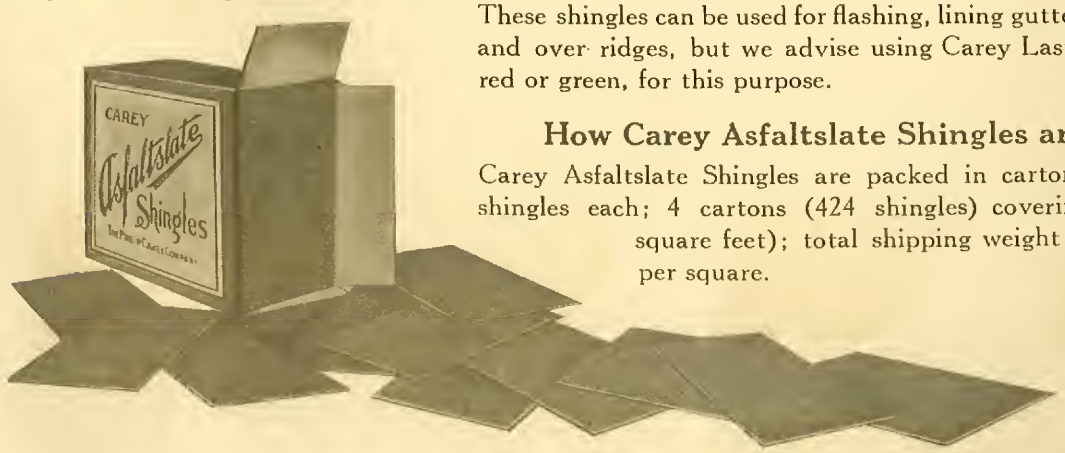
(The Break-Joint Method.)

Have sheathing boards laid closely and securely nailed. See that the surface is clean and free of all projecting nail heads or other obstructions. Use 1-inch nails with round flat heads, not less than ½ inch in diameter. Lay one row of shingles lengthwise along the entire lower edge of the sheathing, exactly flush with the eaves. Have these fit closely, and nail each lower corner, driving nails 1 inch from lower edges and ends. Also drive one nail half way between these two, using three nails to each shingle on this row. Begin the regular course with a full size shingle, as shown in sketch, laying the shingle parallel to, and flush with the outer edge or sloping end of the roof; the lower end of the shingles also flush with the eaves, same as first layer, allowing ½ inch space between shingles. Continue the course, using two nails to the shingle, driven 4½ inches from lower edge.



Begin the second row, using two-third size shingle laid 4 inches to the weather, and nailed same as others. Begin third row, using one-third sized shingle, with same spacing, etc. In beginning fourth row, again use full size shingle and continue as shown in sketch. The ½-inch space between the shingles is to allow for contraction or expansion, and to improve the general appearance.

If shingles are laid 4 inches to the weather, and nailed 4½ inches from lower end, all nail heads will be fully covered and protected.



These shingles can be used for flashing, lining gutters, around cornices and over ridges, but we advise using Carey Lastile (Roll) Roofing, red or green, for this purpose.

How Carey Asfaltslate Shingles are Shipped.

Carey Asfaltslate Shingles are packed in cartons, containing 106 shingles each; 4 cartons (424 shingles) covering 1 square (100 square feet); total shipping weight about 245 pounds per square.

Approved by Underwriters Laboratories, Inc., Chicago, under the direction of the National Board of Fire Underwriters.

The illustration of the garage shows the beautiful combination effected by the use of Carey Asfaltslate Shingles and Lastile, or Slate Surface Roofing.

The use of the shingles in their natural colors, red and green, allow a very artistic effect in solid red or solid green, or in any of the combination arrangements which can be worked out in these colors.

The Lastile Roll Roofing for panelling or siding has no superior. It is absolutely waterproof and immune to the various climatic changes. It requires no painting or other upkeep expense, but retains its permanent color of dark, rich red, or beautiful, brilliant green.

The economical original cost of Carey Asfaltslate Shingles and Lastile Roofing, coupled with the fact that they never require upkeep of any nature make them very attractive for use in building garages, bungalows or other buildings, where durability and artistic beauty are desired.

Carey Asfaltslate Shingles are approved by Underwriters Laboratories, Inc., Chicago, under the direction of the National Board of Fire Underwriters.

CAREY

Ceil-Board

SUPERSEDES PLASTER

For WALLS and CEILINGS

Illustrating and Describing its Many Uses and Advantages for the Making of

BEAUTIFUL INTERIORS

CAREY Ceil-Board

SUPERSEDES PLASTER

FOR WALLS and CEILINGS

Its Construction and Uses

Construction.— Carey Ceil-Board consists of three sheets of chip stock thoroughly moisture-proofed by our improved process, bound together with Gilsonite Asphalt Cement and sized on both surfaces of the finished board with paraffine. Chip stock is made from clean paper cuttings with a high percentage of news stock and is thoroughly clean and hygienic.

Finishes.—Ceil-Board is furnished in six different finishes, *i. e.*, Gray, Tan, Golden Oak, Mission Oak, Circassian Walnut and Waterproof.

Sizes.— Gray and Tan 32 and 48-inch widths; lengths 5, 6, 7, 8, 9, 10, 11 and 12 feet. Special sizes cut from standard panels furnished on specification. Golden Oak, Mission Oak and Circassian Walnut, widths 32 inches only; lengths 5, 6, 7, 8, 9, 10, 11 and 12 feet. Special sizes cut from standard panels furnished on specification. Waterproof, width 48 inches; lengths 5, 6, 7 and 8 feet. Special sizes cut from standard panels furnished on specification. Thickness of all finishes $\frac{3}{16}$ inch.

Weight.— Gray, Tan, Golden Oak, Mission Oak and Circassian Walnut, in bulk, 650 pounds per 1000 square feet; in crates, 800 pounds per 1000 square feet. Waterproof, in bulk, 850 pounds per 1000 square feet; in crates, 1000 pounds per 1000 square feet.

Physical Properties.— Ceil-Board is positively moisture-proof. Its temperature insulating qualities are double that of plaster. It is an effective sound deadener and fire-retarder. It is wholly unaffected by vibration, shocks and jars from any cause. It will not crack or fall.

Completing Materials.—*Nails*—1¼-inch 3-penny flat-head nails for nailing edges; 1¼-inch 3-penny finishing nails for nailing into intermediate studs. Approximately 12 pounds of nails required per 1000 square feet.

Crack Filler.— For filling in joints and countersunk nail holes. Approximately 4 pounds of Crack Filler required per 1000 square feet.

Panel Strips.— Of same material as Ceil-Board, or wooden panel strips.

Uses of Ceil-Board—Carey Ceil-Board is primarily designed to take the place of plaster for walls and ceilings in houses of all classes of construction. It may be used any place where a moisture-proof, sound-proof, insulating material of great tensile strength is required. Its past satisfactory service has warranted hundreds of architects in specifying it for use in dwellings, public buildings, offices, department stores, portable houses, garages, barns, theatres, moving picture shows, dance halls, bowling alleys, railway stations, churches, convention halls, display windows, display rooms, and it is also being largely used for drawer bottoms, mirror backs, case panels, filing devices, veneer core, shipping boxes, table tops, booths, shelving and lining of dry kilns.

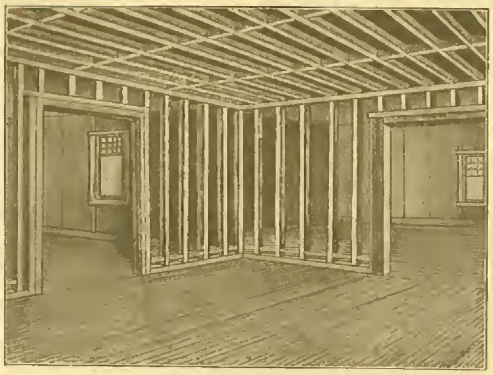
CAREY

Ceil-Board

SUPERSEDES PLASTER

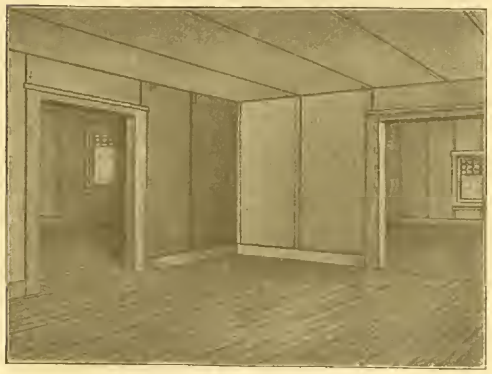
For WALLS and CEILINGS

Instructions for Applying and Decorating



Showing Studding Ready for Ceil-Board.

Nailing Ceil-Board to Studding.



Panelling Over Ceil-Board.

GENERAL INSTRUCTIONS.—Remove Ceil-Board panels from crate and allow them to take on temperature of room before applying. Allow at least 24 hours for this purpose. Lay panels flat on floor. Do not stand them on edge. Always apply panels parallel with studding and joists, unless cross headers have been placed to which to nail edges. All edges and ends must be nailed securely. Unless timbers to which Ceil-Board is to be applied are thoroughly seasoned a good job is not insured.

APPLYING ON NEW WORK.—Apply *ceiling* panels first. Panels should be held in place with a T brace while nailing. Nail along center of panel first, then along the edges and the ends. Cross headers should be placed about every four feet between joists, and panels nailed to these. Nail every two inches along edges with three-penny smooth box nails and every four inches into intermediate joists with three-penny casing nails. Allow ⅛ inch space between panels. Apply *walls* according to above directions. Let panels extend from floor to ceiling. Nail into intermediate studding first and from top to bottom, then along edges and into cross headers. These headers must be placed just below ceiling line and *behind top of base board.* It is also advisable to place them half way between these points.

APPLYING OVER PLASTER.—Follow directions for new work, but use six-penny nails. Be sure that nails strike into studs and joists. Any uneven surfaces must be made smooth before applying Ceil-Board.

PANELLING EFFECT.—Cover the joints with wooden strips and arrange them so as to produce artistic panels on walls and ceilings. These strips may also be applied over solid surfaces to add to the harmonious arrangement. Strips should be painted or stained in keeping with the general decorative scheme, and dimensions should vary with the size of room. Do not apply strips until panels have been painted.

PLAIN WALLS AND CEILINGS.—Fill joints with Carey Crack Filler; allow it to set; sandpaper flush with surface and coat it with shellac. Apply gummed Ceil-Board tape over joints and paint entire surface. Canvas or burlap may also be applied over the surface of Ceil-Board by filling the joints as above and glue sizing the entire surface before applying these materials. Either of these methods eliminate the joints and produce plain walls and ceilings.

Ceil-Board Tape comes in rolls of 100, 200 and 500 lineal feet; is a heavy, tough paper gummed on one side and 1½ inches wide. The gummed side must be thoroughly moistened before applying same and the tape smoothed down at all points until it adheres.

WALLPAPERING. Fill joints with Carey Crack Filler and treat as above, or glue three-inch strips of strong canvas over the joint; allow this to dry and have paper applied in usual manner.

PAINTING.—Apply paint as done in the usual way on new plaster work. See that nails in intermediate studding and joists are countersunk, and holes filled with Cary Crack Filler before painting. We recommend Carey Dultone Paint for finishing Ceil-Board in this way.

The Finished Ceil-Board Room.

The above pictures are illustrative of four rooms of an eight-room bungalow built in the department store of The Alms & Doepke Company, Cincinnati.

This house serves for the display of furniture and other household articles and has proven to be one of the most potent factors in the sale of their wares.

This entire house is lined with Ceil-Board. Some of the rooms are painted and panelled; others are wall-papered to give variety. In using wall board for this purpose care should be taken to ascertain whether it can be papered—most wall boards cannot, Ceil-Board can.

Ceil-Board is ideal for building houses or rooms for displaying furniture, as it is light, easily worked, leaves no dirt behind, is unaffected by vibration and may be wall-papered or painted.

10 CAREY RUBBER ROOFINGS 10

10 DISTINCTIVE FINISHES

WHEN THE STRUCTURE MUST BE DESIGNED AND ERECTED WITHIN A DESIGNATED COST.

Most important and vital under such conditions is the selection of roofing.

Your greatest assurance of securing the maximum roof efficiency at minimum cost lies in the

FORTY YEARS OF MANUFACTURING EXPERIENCE BEHIND EVERY ROLL OF CAREY RUBBER ROOFING.

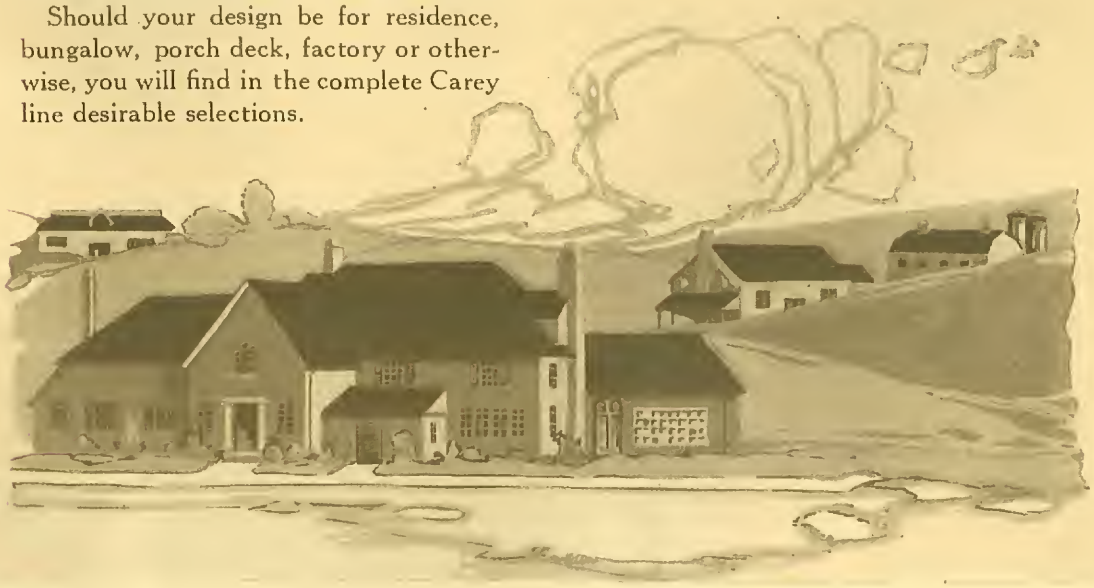
Made from felts which have been standardized after years of careful research and experiment and *proven efficiency in actual service.*

Treated with Asphalts compounded in our own refineries under our own formulas which have had the severest tests of long service.

Fabricated upon machinery specially designed to produce the highest degree of perfection in this class of roofing material.

Produced in a variety of finishes which are obtained by embedding into the heavy asphalt top coating, while hot, the different surfacing materials; the sheets being then carried through heavy rollers under high pressure which positively insures a perfectly bonded and permanent wearing surface.

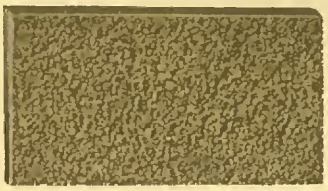
Should your design be for residence, bungalow, porch deck, factory or otherwise, you will find in the complete Carey line desirable selections.



CAREY RUBBER ROOFINGS

LASTILE—Slate Surface. (Red.) Covered with a heavy coating of crushed red slate in natural, permanent, beautiful colors.

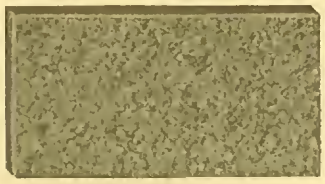
Rolls 32 inches wide by 40½ feet long (one square). Standard weight, 85 lbs. per square.



Pebble Top. Coated with a layer of clean, clear lake gravel in natural color. A beautiful light brown.

Rolls 36 inches wide by 36 feet long (one square)

1-Ply.....weight, 65 lbs. per square
2-Ply.....weight, 75 lbs. per square
3-Ply.....weight, 85 lbs. per square



Double Sanded Surface. Finished on both upper and lower sides with pure white sand, making an extra heavy, hard wearing surface.

Rolls 32 inches wide by 40½ feet long (one square).

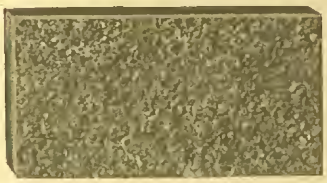
1-Ply.....weight, 50 lbs. per square
2-Ply.....weight, 60 lbs. per square
3-Ply.....weight, 70 lbs. per square
4-Ply.....weight, 80 lbs. per square

Flat Finish. Asphalt surface, perfectly smooth, and finished with a coat of very fine soapstone. A popular roofing for buildings where an economical, durable roof is desired.

Rolls 36 inches wide by 36 feet long (one square).

1-Ply.....weight, 35 lbs. per square
2-Ply.....weight, 45 lbs. per square
3-Ply.....weight, 55 lbs. per square
4-Ply.....weight, 65 lbs. per square

Roll of Carey Rubber Roofing Packed for Shipment.



Marble Surface. Rolls 36 inches wide by 36 feet long (one square).

1-Ply.....weight, 35 lbs. per square
2-Ply.....weight, 45 lbs. per square
3-Ply.....weight, 55 lbs. per square
4-Ply.....weight, 65 lbs. per square

Grape Vine Finish. The acme of quality in its class. Has no superior anywhere at any price. Used for practically every roofing purpose.

Rolls 36 inches wide by 36 feet long (one square).

1-Ply.....weight, 35 lbs. per square
2-Ply.....weight, 45 lbs. per square
3-Ply.....weight, 55 lbs. per square
4-Ply.....weight, 65 lbs. per square

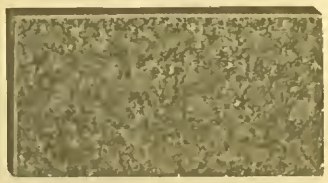
LASTILE—Slate Surface. (Green.) Covered with a heavy coating of crushed green slate in natural, permanent, beautiful colors.

Rolls 32 inches wide by 40½ feet long (one square). Standard weight, 85 lbs. per square.

Asbestos Top. Finished with a creamy white, pure Asbestos sheet, strikingly beautiful and fire resisting to an unusual degree, absolutely immune to acid fumes and every destructive element.

Rolls 36 inches wide by 36 feet long (one square).

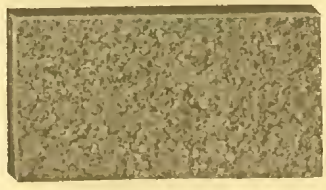
Medium.....weight, 45 lbs. per square
Heavy.....weight, 55 lbs. per square



Mica-Kote. Finished on both sides with a dense layer of pure Mica Flakes, giving a dazzling, silvery appearance which is very attractive and durable.

Rolls 32 inches wide by 40½ feet long (one square) or rolls 36 inches wide by 36 feet long (one square).

1-Ply.....weight, 35 lbs. per square
2-Ply.....weight, 45 lbs. per square
3-Ply.....weight, 55 lbs. per square
4-Ply.....weight, 65 lbs. per square



Sanded Surface. Finished on one side with a clear white sand which makes a hard and lasting surface. A splendid popular priced roofing for general purposes.

Rolls 36 inches wide by 36 feet long (one square).

1-Ply.....weight, 35 lbs. per square
2-Ply.....weight, 45 lbs. per square
3-Ply.....weight, 55 lbs. per square
4-Ply.....weight, 65 lbs. per square

CAREY RUBBER ROOFINGS

Specification for Applying Rubber Roofing

WORK PROPOSED.—This specification contemplates furnishing all material and labor required to apply roofing and flashing and line gutters (no metal work included). Remove or hammer down all projecting nail heads; cover all knot holes, etc., in the sheathing and sweep the sheathing clean before roofing is applied. Sheathing must be dry before applying the roofing.

Materials used in the construction of this roof shall be Carey Rubber Roofing, ... finish, weight per square when applied to be approximately.....pounds.

APPLICATION.—The roof surface shall be covered with Carey Rubber Roofing, ...finish, lapping the sheets 2½ inches at the joints and 4 inches at cross seams.

Before nailing, cement between sheets at the joints and cross seams with Carey Lap Cement (packed in core of each roll of roofing).

Roofing sheets shall be nailed at the joints and cross seams with large head roofing nails to be driven not more than 2 inches apart. Care should be taken to avoid driving nails in cracks or knot holes.

Roofing sheets shall be laid crosswise of the sheathing boards.

GUTTERS AND VALLEYS.—Line with a sheet of Carey Rubber Roofing, ...finish, cut to a width not over 18 inches and running full length of gutter or valley. Lay the sheet lengthwise with gutter or valley so that joints will not occur in the center. All gutter and valley sheets to be applied as specified under "Application."

Explanation of Cuts.

Cut No. 1.—Showing application on ordinary roof.

Cut No. 2.—Method of flashing to wooden 2x4 in brick wall.

Cut No. 3.—Method of flashing by running roofing between brick and fastening with wedge shaped strip.

Cut No. 4.—Showing method of lining gutter.

Cut No. 5.—Manner of cutting strip to flash around chimney.

Cut No. 6.—Flashing around chimney.

Cut No. 7.—Use of chicken ladder on steep roof. Note cap strip.

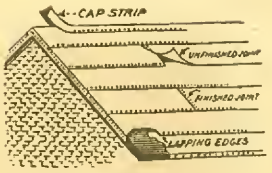
FLASHING.—The roofing sheets shall be cut so they will extend up on all fire walls, skylights, curbs, chimneys and other vertical surfaces to a height of 3 inches. This extension not to be fastened to the vertical surface. A sheet of Carey Rubber Roofing, ...finish, full length and cut to a width of 9 inches to be applied along the vertical surface extending 3 inches on roof proper and 6 inches on the wall, being securely cemented and nailed to the roof surface and along upper edge to nailing strip or into mortar joint on vertical surface.

COUNTERFLASHING.—See under "Notice to Owner or Contractor."

ROOF FINISH.—After completing application cement over all joints carefully and over all nail heads with Carey Lap Cement.

NOTICE TO OWNER OR CONTRACTOR.

Roof surface is to be prepared and made ready for application of Carey Rubber Roofing, ...finish, with dry seasoned sheathing boards of uniform thickness closely laid. Tongue and grooved sheathing 6 to 8 inches wide is recommended. It is also recommended that sheathing boards be put on, broken joint method, as is custom in laying flooring. All sheathing boards must be end nailed on rafters and in no event be cut between rafters. All sheathing boards to be surface nailed with at least 2-inch nails to each purlin in addition to any blind nailing. Sheathing boards to be placed on building horizontally.
Counterflash all walls with No. 26 gauge galvanized iron, or if preferred, copper may be used. Attach counterflashing firmly to wall with suitable plugs and Portland cement.
NOTE—If Carey Continuous Cleat is specified for application no cement is furnished for joints and cross seams.



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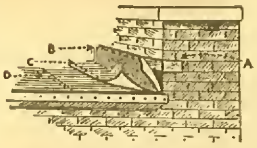
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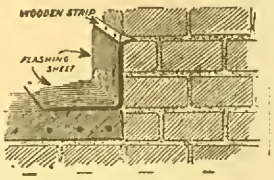

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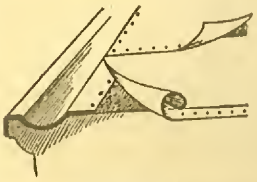
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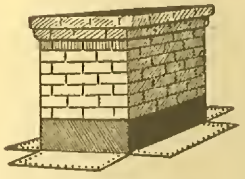
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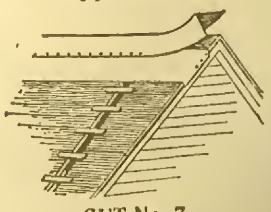
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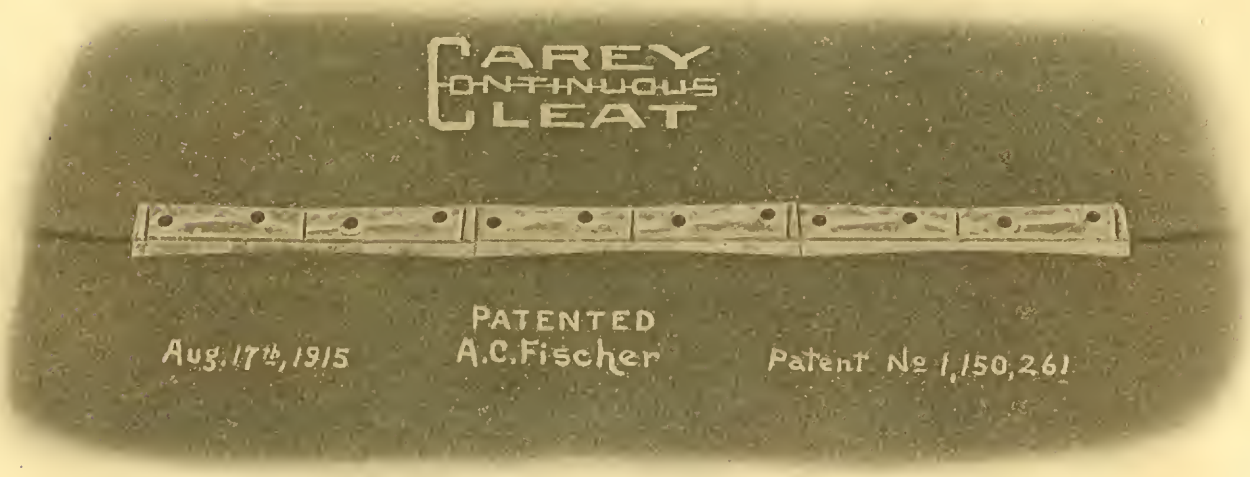


The Carey Continuous Cleat

The introduction of metal cleats marks a new era in the application of ready roofings.

Carey Continuous Cleats possess more advantages than other styles of cleats, without their defects.

Carey Continuous Cleats are flat in construction, precluding danger of displacement through abuse, and by an ingenious arrangement of depressions in the cleat surface, a free flow of water is allowed when applied horizontally to the roof. The unique provision of end lugs permits a tight overlapping of one cleat on another, producing a continuous, unbroken and water-tight seam.

Note the staggered relation of nails which precludes danger of split sheathing — a common occurrence when driving nails in a straight line.

Another special feature is the concave side formation which has a tendency to swirl the water away from the seams when these run vertically with the pitch of the roof.

A crowning advantage is provided by the flange arrangement which laps over the lower sheet, completely sealing and protecting the edge of the roofing sheet from exposure.

Specify Carey Continuous Cleats for ready roofing application.

CAREY Elastite

EXPANSION JOINT

"The Sandwich Joint"

Is in use in more than one thousand cities throughout the United States. Hundreds of Engineers and Contractors have written us expressing their appreciation of this material. If you have never used Elastite and want to know where it is used in your locality, we would be pleased to give you this information.

Elastite is not an experiment, its worth and superiority have been proved in all varieties of paving under all conditions, in all parts of the country.

Elastite does not run in hot weather nor is it brittle in cold. You will not experience any trouble with this joint sticking together in transit.

Doubly insure your paving work this year by using Elastite. No order is too small and none too large. We can take care of your requirements promptly.

Lewiston Road, New York State Highway, No. 5306, equipped with three layers of Elastite on each side of street.

CAREY *Elastite* EXPANSION JOINT

This joint has been aptly called "The Sandwich Joint" on account of the nature of its construction, which is very clearly shown in the illustration.

It consists of a heavy body of our special asphalt compound sandwiched between two layers of a special grade of asphalt-saturated wool-felt, the whole being firmly bonded together by a combining process of our own invention.

The feature of this joint is the increased compressibility secured by (1) increasing the volume of the asphalt compound, and (2) keeping it in a solid body securely held in place and reinforced by the layers of asphalt-felt.

Its advantage is most apparent when the expansion ratio of the pavement is unusually high, yet, notwithstanding, the readiness with which the material responds to any expansion of the paving, exhaustive tests have proved that comparatively little asphalt is forced out, due to the even distribution of the compound from top to bottom and end to end of the joint, and its uniform thickness as well as its high melting point.

Carey Elastite Expansion Joint saves time and labor, eliminating waste in application and absolutely preventing a faulty job either from carelessness or oversight.

Built complete at the factory, installed with one operation, adapted to all classes of paving and applied in the usual places, viz.: longitudinally only in brick streets, between gutter or curb and paving; longitudinally and transversely in wood-block and granite-block streets, concrete roads, and in cement sidewalk construction.

Advantages

(1) Elastite eliminates danger of imperfect joints. (2) Lessens inspector's anxiety. (3) Affords a great element of safety. (4) **Insures full depth of joints.** (5) Provides for all temperature changes. (6) Encourages good work. (7) It is easy to apply. (8) Reduces labor cost. (9) Requires no investment in equipment. (10) Saves time, is economical and satisfactory.

Elastite Expansion Joint is used effectively in concrete bridges, floors, walls, piers, viaducts, roofs, reservoirs, dams, sidewalks, in fact in any construction work where it is necessary to provide for expansion of materials.

CAREY *Elastite* EXPANSION JOINT

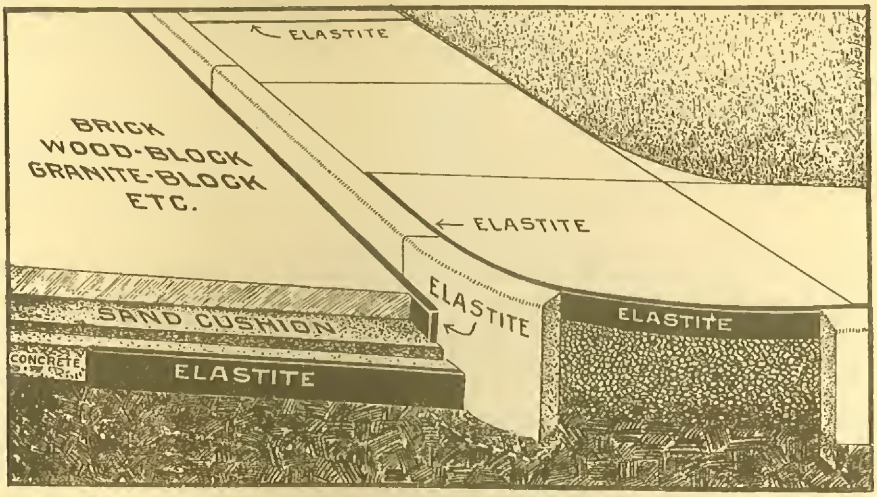
Expansion Joints, as indicated on plans, shall be filled by placing in position, for full depth and width, Carey Elastite Expansion Joint. This material, previously prepared in the form of a built-up board, shall be composed of a preformed solid body of asphalt compound, reinforced on both sides with a layer of asphalt saturated high-grade wool-felt. The asphalt used in the joint shall meet following requirements:

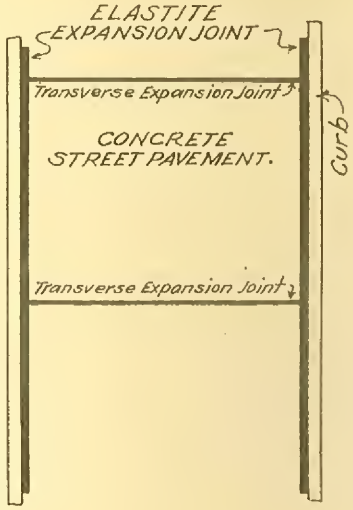
Melting point	250°F.
Penetration (100 grams weight No. 2 needle, 5 seconds)	38°
Solubility in carbon Bi-sulphide	100%
Solubility in carbon Tetrachloride	99.6%
Solubility in carbon 74 deg. Naphtha	67%

Thickness and depth of joint shall be as shown on plans, and filler shall be provided in single thickness in all cases where joint is 1 inch thick or less. If over 1 inch thick, filler shall consist of several layers, all of equal thickness, a single layer in any case, not to exceed 1 inch in thickness.

Concrete Pavement.

The National Conference on Concrete Road Building, 1914. Standard Specifications for One and Two Course Concrete Street Pavement. Sec. 26 and 27, pages 193 and 201.





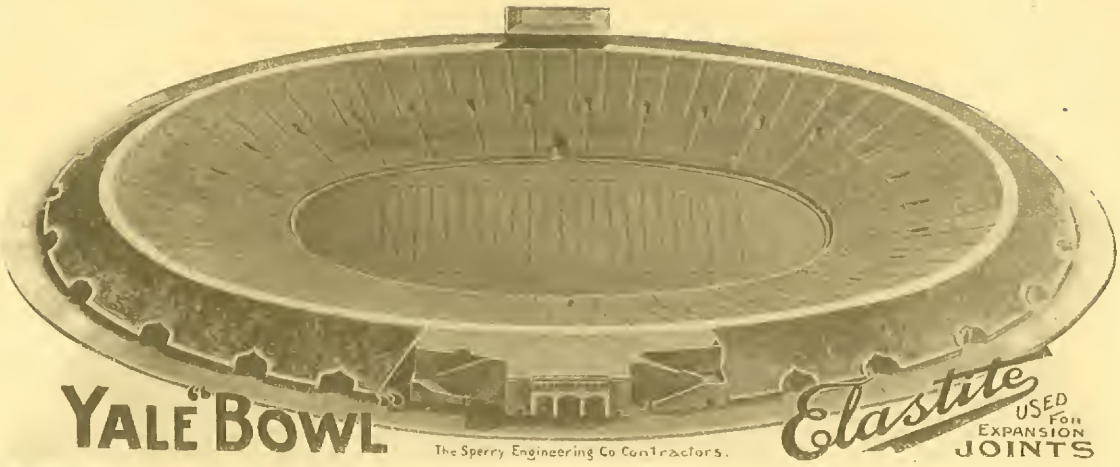
Joints.

Width and Location.—Transverse Joints shall be not less than ¼ inch nor more than ⅜ inch in width, and shall be placed across the pavement perpendicular to the center line, not more than 35 feet apart. A longitudinal joint not less than ¼ inch wide shall be constructed between the curb and the pavement. All joints shall extend through the entire thickness of the pavement, and shall be perpendicular to its surface.

Sec. 27. Protection of Joints.—Refers to the use of steel plates anchored to the concrete.

Sec. 28. Joint Filler.—All joints shall be formed by inserting during construction, and leaving in place, the required thickness of joint filler which shall extend through the entire thickness of the pavement.

Elastite can be readily handled to place, is sectional, or, if you desire, we furnish cut to crown. The reinforcement resulting from the use of Elastite adds to its usefulness in concrete construction of paving. Practice places the transverse joints thirty feet apart and ¾ inch wide. Longitudinal joints along the curb or gutter from ½ to 1 inch in width.



THE SPERRY ENGINEERING COMPANY
(INCORPORATED)
CONSTRUCTING ENGINEERS
82 CHURCH ST.
NEW HAVEN, CONN.

Address all communications to the Company.

SUBJECT

Feb. 22, 1915.

The Philip Carey Co.,
Cincinnati, Ohio.

Gentlemen:-

In the building of the Yale Bowl, we used a large quantity of your so-called Elastite, $\frac{3}{8}$" thick, in the expansion joints of the concrete work, and I thought you would be interested to know how it was used and with what success. It was easy to handle and when placed made a perfect joint and acted in all ways as an expansion joint.

We are glad to say that should occasion arise, we shall use it again.

Yours very truly,
SPERRY ENGINEERING COMPANY,
A. WILLIAM SPERRY,
President.

AWS:T

Carey Fibrewove Insulating Paper

AND

DAMP-PROOFING PERCOPROOF COMPOUND

Dampness and atmospheric changes are the elements of deterioration and decay, and a building properly protected against moisture from cellar foundation to coping, not only on the outside where the first evidences of decay are readily detected, but protected in the masonry walls, on the roof and in the hidden parts, is the building that will give the owner perfect satisfaction and require least maintenance.

For forty years the Philip Carey Company has been America's foremost producer of asphalt water-proofing and weather-proofing materials. Carey products are recognized factors supplying insurance for the parts of the building not protected by the underwriters.

When you specify Carey damp-proofing materials, you do so with the assurance that your specifications will be filled properly and promptly.

CAREY Fibrewove INSULATING PAPER

With the advent of treated building papers careful architects have abandoned the use of the old style rosin sized and dry sheathing papers.

For a suitable paper lining you want a material that is moisture-proof, wind-proof, vermin-proof, dust-proof, acid-proof, decay-proof, temperature retarding and odorless. The paper must also possess sufficient tensile strength to permanently sustain its weight after erection.

Carey Fibrewove Papers embody every essential requirement of perfect paper insulation — specify them in your work and be assured of maximum results.

Carey Fibrewove Papers are made from special jute stock base which is carefully and thoroughly treated with pure, high-grade, odorless asphalts compounded in our own refineries, resulting in a finished product possessing unusual tensile strength.

In comparative tests on the Mullen testing machine Carey Fibrewove Papers will show an average of 10 pounds greater tensile strength than any similar paper on the market. This fact demonstrates its greater density and solid texture as well as its efficiency in resisting air penetration.

Carey Fibrewove Papers are furnished in rolls 36 inches wide containing 500 or 1000 square feet and in various weights and finishes to suit conditions as follows:

Specifications

No. 1 Fibrewove saturated only, weight, 90 lbs. per 1000 square feet.
No. 2 Fibrewove saturated only, weight, 60 lbs. per 1000 square feet.
No. 3 Fibrewove saturated only, weight, 42 lbs. per 1000 square feet.
No. 4 Fibrewove saturated and coated, weight, 43 lbs. per 1000 square feet.
No. 5 Fibrewove saturated and coated, weight, 58 lbs. per 1000 square feet.
No. 6 Fibrewove saturated and coated, weight, 98 lbs. per 1000 square feet.
No. 7 Fibrewove coated only, weight, 33 lbs. per 1000 square feet.
No. 8 Fibrewove coated only, weight, 43 lbs. per 1000 square feet.
No. 9 Fibrewove coated only, weight, 66 lbs. per 1000 square feet.
No. 10 Fibrewove coated only, special, weight, 34 lbs. per 1000 square feet.
No. 11 Fibrewove coated only, special, weight, 46 lbs. per 1000 square feet.
No. 12 Fibrewove coated only, special, weight, 60 lbs. per 1000 square feet.

DAMP-PROOFING PERCOPROOF COMPOUND

As a matter of health and comfort all structures should be kept dry, and at the same time they should be protected from the disintegrating effects of dampness. The need of a damp-proofing compound is a most pressing one, no matter where the structure is located, or the method of construction.

Considerable time and attention has been given to this subject, and with the increased use of concrete in its many forms this interest has increased with the same or even greater ratio.

The introduction of Percoproof marks a new era in damp-proofing. It is an ideal damp-proofing compound and fulfills the highest expectations of Architects, Engineers and Builders.

Carey Percoproof damp-proofing compound is black in appearance and is made from the fusion of the most select water-proof gums which are worked into a uniform mass without pores. Great care is taken in the manufacture of this material, and as a result there is a uniformity maintained throughout and the compound is always the same. No extra expense is connected with the use of this compound in the way of thinning material, such as oil.

Percoproof comes to you prepared for use, but in cold weather when this compound is found to be too heavy for application a little heat is required. Under no condition shall oil of any kind be used as a thinner in Percoproof. Since this compound is *not* prepared with oils, and since oils are not permanent, due to the action of acids, alkalies and other destructive elements found in the soil, it should never be mixed with such materials. A strict observance of this one fact will aid greatly in the proper execution of a damp-proofing contract where Percoproof is employed. Percoproof forms a complete, unbroken, even, elastic and permanent film when applied to concrete, brick, stone, stucco, tile and plaster. It closes all the pores and prevents moisture and dampness from coming through. Under all conditions this compound remains elastic, and is always thoroughly set but not brittle.

Specifications for Damp-proofing Interior Walls with Percoproof.

1. SURFACES.—(a) The surfaces to be coated with Percoproof shall be absolutely dry and comparatively smooth.

(b) Brush all walls with a stiff broom to remove dirt or loose particles of any kind that might interfere with the direct application of the damp-proofing compound.

(c) Uneven places and cracks shall be made smooth by applying cement, mortar, or plaster of Paris paste to same as the case may require. Time shall be given for this mortar or paste to become dry and set.

(d) Percoproof shall not be applied upon any surface that has been previously painted if the old paint shows indications of cracking, scaling or peeling. Old paint that is found to be defective must be scraped and burnt off the surface before Percoproof is applied.

2. PREPARATION OF PERCOPROOF.—(a) No alteration of any nature shall be made to Percoproof as originally opened, for it is prepared in the correct consistency for use.

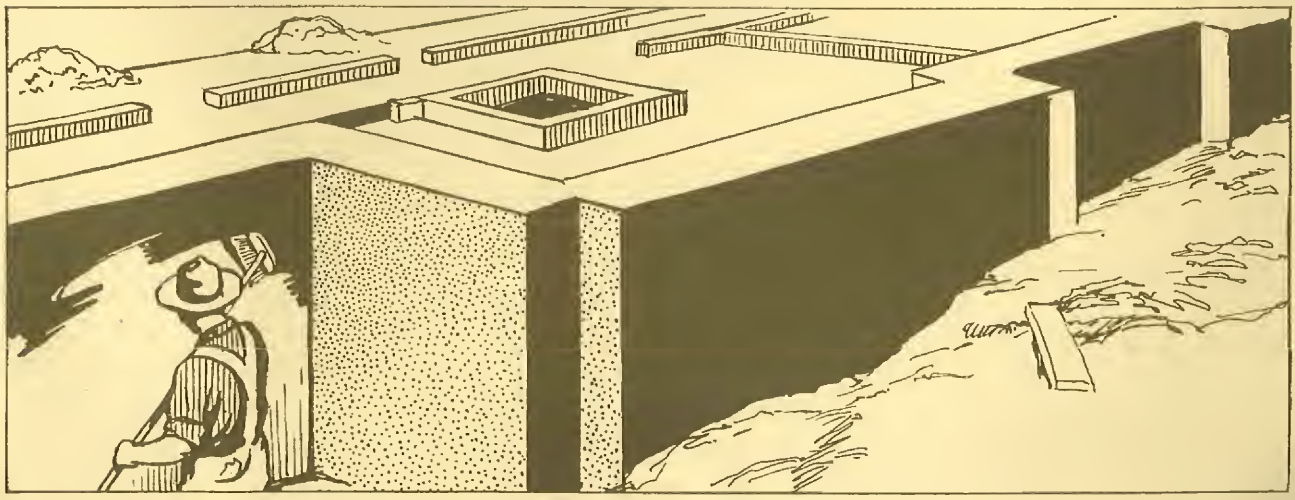
(b) When Percoproof is allowed to stand in cold weather the material may become too heavy in body for proper application. Under these conditions it shall be heated slightly, but at no time shall same be thinned with oil.

3. APPLICATION OF PERCOPROOF.—(a) All interior foundation walls shall be given a liberal coating of Percoproof applied with heavy brushes and worked well into the pores.

(b) In superstructure work all brick, concrete block, stucco or scratch coat plaster, on interior outside walls shall be given a coat of Percoproof applied as above stated.

(c) To the under surface of all concrete roofs shall be applied one liberal coating of Percoproof.

(d) After the first coat has been given time enough to dry and set thoroughly, if it is so decided, another application of Percoproof may be made over the above mentioned surfaces.



The Application of Carey Percoproof to Foundation Walls, Cincinnati Hospital.

Assembled View of General Hospital, Cincinnati, Ohio.

8000 Gallons of Percoproof Used on These Buildings

We wish to call particular attention to the damp-proofing contract executed with Percoproof at the New General Hospital, Cincinnati, Ohio. This hospital comprises eighteen large buildings, and only the best of materials and workmanship were accepted, which proves conclusively that Percoproof should be recognized and specified by the best Architects, Engineers and Builders throughout the country.

Percoproof was used exclusively on all exterior foundation walls, tunnels and area ways below grade line. One coat of this damp-proofing compound was applied on the above work, using approximately 3000 gallons of Percoproof. All interior furred basement walls and the inside of all exterior walls were coated with Percoproof, requiring 5000 gallons; making a total of 8000 gallons of this damp-proofing compound used throughout these eighteen large buildings. Write for our Percoproof booklet.

These buildings were entirely roofed with Carey Flexible Cement Roofing.

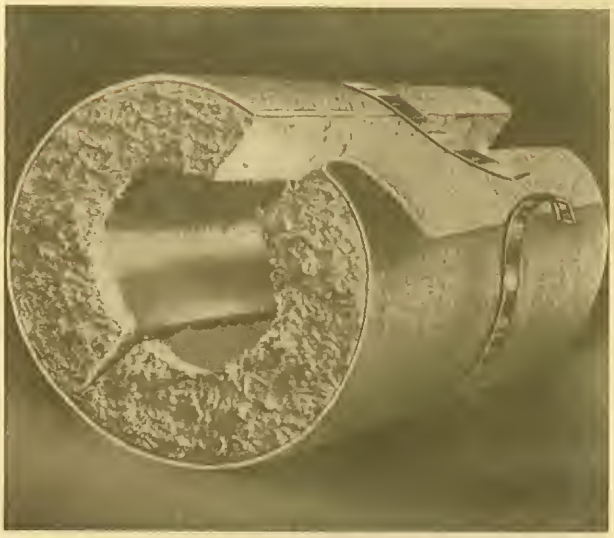
CAREY Magnesia and Asbestos INSULATING PRODUCTS

The suggestions and ideas conveyed in the following specifications for insulating coverings are offered to architects and engineers who may desire to take advantage of our knowledge and experience in this field. We have developed forms of insulating coverings to give the best results for various conditions, not only in insulating value but in durability as well, and these specifications are offered, not with the idea of being complete in every detail, but for the purpose of illustrating the proper class of insulation to be used for certain fundamental conditions.

For some classes of work they can be used without change, and for others they can be taken as a basis upon which to build full and complete specifications.

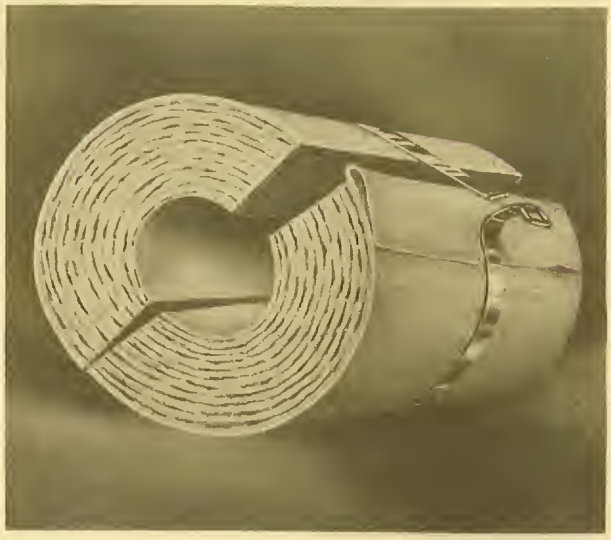
Our engineering department will be pleased to give any information or render you any assistance possible in solving your insulating problems.

CAREY PIPE COVERINGS



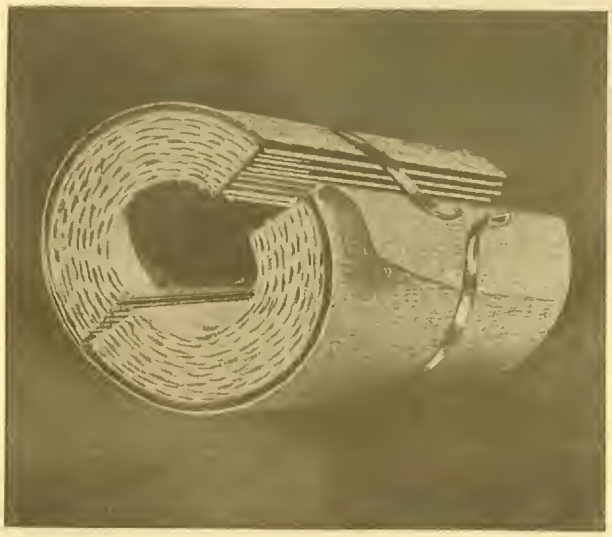
Carey 85% Magnesia Covering

Is recommended for medium and high pressure steam lines where **maximum economy** is desired. It is composed of approximately 85% magnesium carbonate and 15% fibrous asbestos, a combination recognized by leading engineers to be the most efficient pipe insulation. It is light, fire-proof, durable and will not injure the pipes.



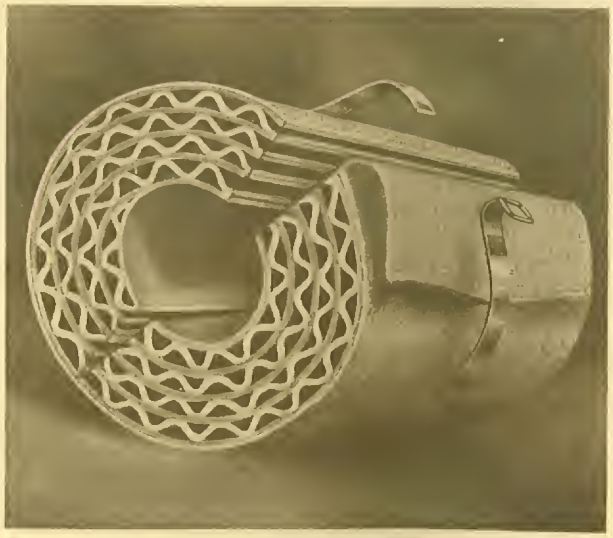
Carey Serrated Asbestos Covering

Is recommended for superheated steam and vibrating steam pipes, or pipes receiving rough usage. It is composed of successive layers of heavy indented asbestos felt, the indentations of each layer being sealed by the following layer, producing dead air spaces and high efficiency. These layers being made from one continuous sheet of heavy asbestos makes this covering tough and durable.



Carey Carocel Covering

Is recommended for medium or low pressure steam lines, and lines given rough usage. It is composed of alternate layers of plain and corrugated asbestos paper, the corrugations being approximately ⅛ inch deep. It is the most efficient form of asbestos covering in addition to being light, strong and fire-proof.



Carey Duplex Covering

Is recommended for hot water heating systems. It is made of alternate layers of corrugated asbestos paper and plain wool felt. The corrugations form air spaces approximately ¼ inch deep and the combination of materials produces a covering having exceptionally good insulating value in addition to being light and strong.

CAREY PIPE COVERINGS

Specifications

Superheated Steam Pipes.—All superheated steam pipes 4 inches in diameter and over shall be covered with a first layer of Serrated asbestos pipe covering, approximately 1 inch thick, and a second layer of standard thick 85% Carbonate of Magnesia pipe covering applied to break all seams and joints of the first layer.

All superheated steam pipes under 4 inches in diameter shall be covered with a first layer of Serrated asbestos pipe covering, approximately ½ inch thick, and a second layer of standard thick 85% Carbonate of Magnesia pipe covering applied to break all seams and joints of the first layer.

High Pressure Saturated Steam Pipes.—(Over 100 lbs.) All high pressure saturated steam pipes 4 inches in diameter and over shall be covered with double standard thick 85% Carbonate of Magnesia covering applied so that the second layer will break all seams and joints of the first layer.

All high pressure saturated steam pipes under 4 inches in diameter and all drip pipes shall be covered with standard thick 85% Carbonate of Magnesia pipe covering.

Medium Pressure Steam Pipes.—(Under 100 lbs.) All steam pipes not otherwise specified shall be covered with Carocel asbestos pipe covering 1 inch thick.

Exhaust Steam Pipes.—All exhaust steam pipes shall be covered with Carocel asbestos pipe covering 1½ inches thick.

Low Pressure Steam Heating Plants.—All low pressure steam heating pipes, including returns, drips, risers and radiator connections, shall be covered with Carocel asbestos pipe covering 1 inch thick.

Hot Water Pipes.—All hot water pipes, whether exposed or concealed, shall be covered with 4-ply Duplex pipe covering approximately 1 inch thick.

Superheater.—Superheater shall be covered with Carocel asbestos blocks 2 inches thick, held in place with galvanized hexagonal wire mesh and finished with a ½ inch coat of No. 100 asbestos cement with canvas jacket pasted on.

Receiver.—Receiver shall be covered with 85% Carbonate of Magnesia blocks 1½ inches thick, finished with a light coat of magnesia cement and canvas jacket pasted on.

Boiler.—The ends and exposed portions of boiler shell shall be covered with 85% Carbonate of Magnesia blocks 2 inches thick, firmly wired on and finished with a ½ inch thick coat of No. 100 hard finish asbestos cement.

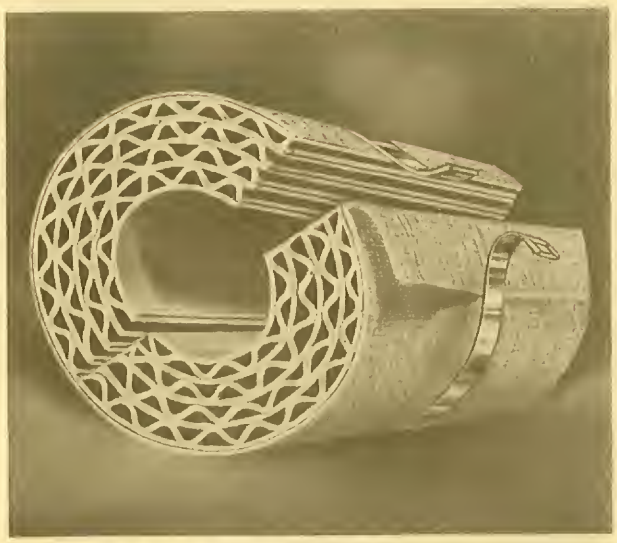
Breeching.—Cover all steel plate connections from the boilers to the vertical flue with 2 inch thick Carocel blocks, firmly wired on, held in place with galvanized hexagonal wire mesh, and finished with ½ inch coat of No. 100 hard finish asbestos cement.

Feed Water Heater.—Feed water heater shall be covered with 1 inch thick Carocel asbestos blocks, firmly wired on, held in place with galvanized hexagonal wire mesh, and finished with ½ inch thick coat of No. 100 hard finish asbestos cement with canvas jacket pasted on.

Hot Water Tank.—Hot water tank shall be covered

New 34 Story Union Central Building, Cincinnati, Ohio. Ten Miles of Carey 85% Magnesia and Carey Carocel Coverings used throughout

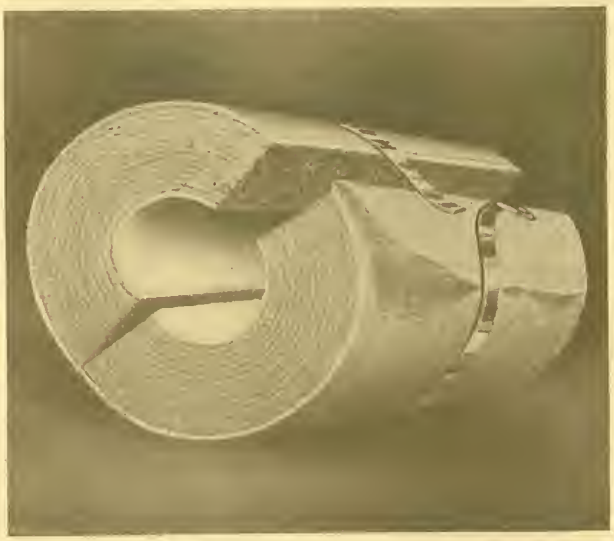
CAREY PIPE COVERINGS



Carey Asbestos Aircell Covering

Is recommended for use on low pressure steam and hot water lines, where price is the most important consideration.

Is composed of alternate layers of plain and corrugated asbestos paper. It is light, strong, fire-proof and has excellent insulating value, considering its relatively low price.

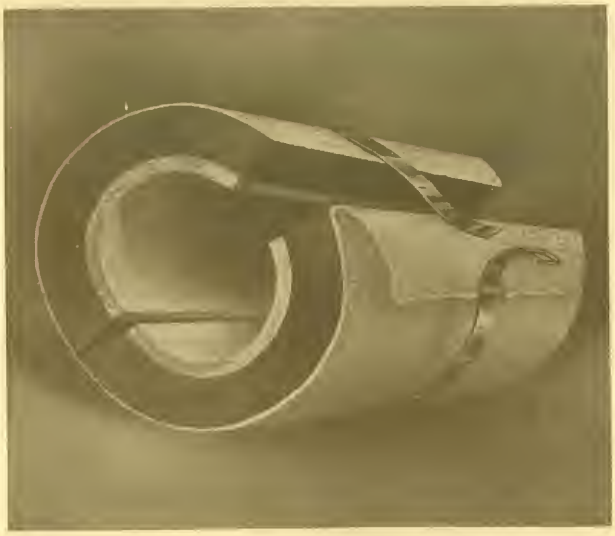


Carey Impervo Covering

Is recommended for cold pipe lines to prevent sweating, and as an insulation for cold water and ice water lines. It is composed of alternate layers of wool felt and water-proof paraffin paper with an inner lining of paraffin paper. This construction gives high insulating value and makes the covering practically impervious to moisture.

Carey Protecto Covering

Is recommended for cold water lines to prevent freezing. It is composed of an inner layer of hair felt reinforced by an outer layer of wool felt. The insulating value of these materials is well known.



Carey Argentum Covering

Is recommended for low pressure steam and hot water pipes exposed to moisture, where an inexpensive form of insulation is required. It consists of a water-proof Argentum body with a heavy inner lining of asbestos felt.

CAREY PIPE COVERINGS

Specifications

(Continued)

with 1 inch thick Carocel asbestos blocks, firmly wired on, held in place with galvanized hexagonal wire mesh, and finished with ½ inch thick coat of No. 100 hard finish asbestos cement with canvas jacket pasted on.

Ventilating System.—Cover the casing of the tempering and heating coils, fan housing and all warm air ducts with Carocel asbestos board 1 inch thick, firmly wired on and covered with a 16-pound asbestos felt. All exposed warm air ducts shall be covered with 6-ounce canvas sewed on.

Insulated Ceilings.—Cover the entire ceilings of the engine, pump and boiler rooms with Carocel asbestos blocks 2 inches thick, finished with wire lath and ½ inch coat of hard finish cement, troweled smooth. Blocks shall be supported by suitable tee irons, suspended from the main ceiling so that the bottom surface of the insulated ceiling shall be 00 inches below the level of the floor above.

Exposed Steam and Hot Water Pipes.—All steam (or hot water) pipes exposed to the weather shall be covered first with a layer of standard thick 85% Carbonate of Magnesia pipe covering, over which shall be applied a double layer of ¼ inch thick water-proof Argentum shells, so that no seams or joints of either shell coincide. Staple the seams of the Argentum shells at intervals of 2 to 3 inches. To the outer surface of each shell apply a heavy coat of Carey Universal cement. Cover exposed fittings with 85% Carbonate of Magnesia blocks and cement flush with the balance of the pipe covering and finish with canvas and a heavy coat of Carey Universal cement.

Cold Water Pipes.—All cold water pipes in basements, or concealed between walls, floors or ceilings, or exposed in finished rooms, shall be covered with double shell Impervo pipe covering, each shell being ½ inch thick and applied so that the outer shell will break all seams and joints of the inner shell.

All cold water pipes in entrances, area-ways or unheated rooms, or otherwise exposed, shall be covered with Protecto pipe covering 1¼ inches thick, consisting of ¾ inch thickness of hair felt and ½ inch thickness of wool felt.

Ice Water Pipes.—All ice water pipes, either exposed or concealed, shall be covered with double shell Impervo pipe covering, each shell being ¾ inch thick and applied so that the outer shell breaks all seams and joints of the inner shell.

Pipe Fittings.—All superheated steam fittings, valves and flanges shall be covered with No. 100 asbestos cement, not less than 2 inches thick, to conform to the thickness of the covering on the pipe.

All saturated steam and hot water fittings, valves and flanges shall be covered with Magnesia blocks and cement, or Magnesia cement (No. 100 cement can also be used) not less than 1 inch thick, to conform to the thickness of the covering on the pipe.

All cold water and ice water fittings shall be covered with hair felt and finished with asbestos cement.

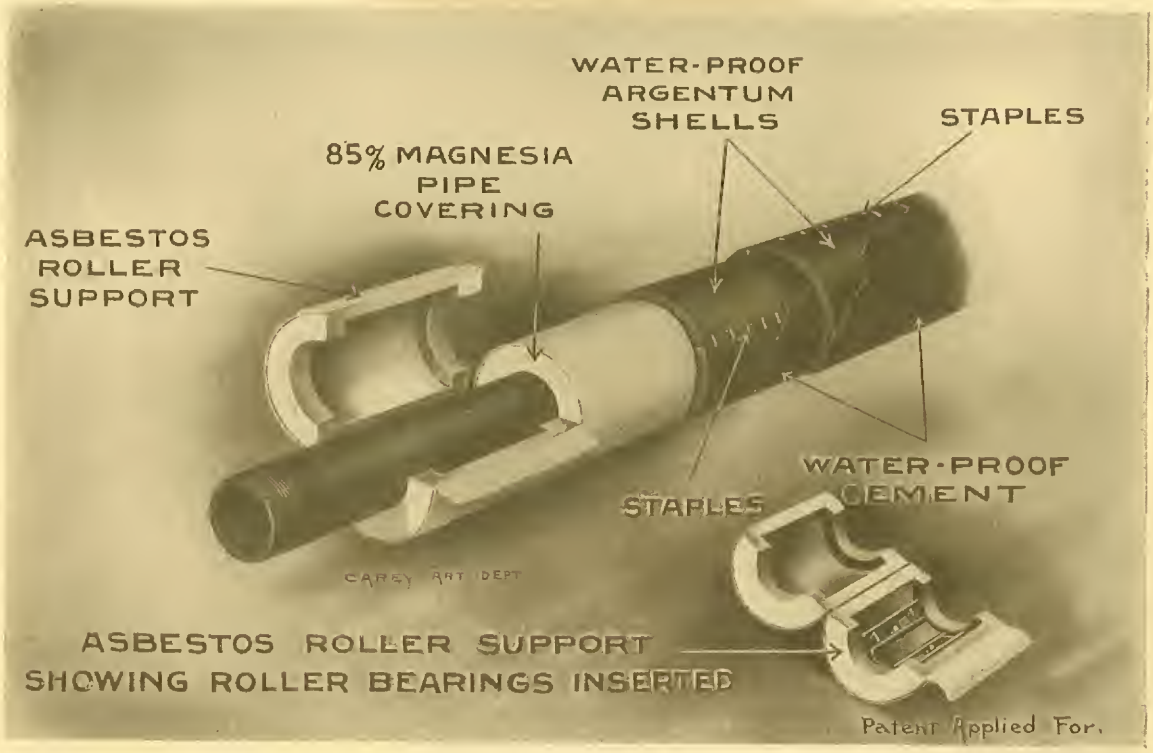
All fittings shall be finished with canvas jacket smoothly pasted on.

Finish.—All coverings, unless otherwise specified, shall be finished with canvas jacket pasted on, and with brass lacquered bands on 18-inch centers. Covering shall be finished with two coats of cold water paint approved by the architect.

St. Regis Hotel, New York, N. Y.
Carey Pipe Coverings used throughout.

CAREY SYSTEM OF INSULATION

For Underground Steam Pipes



Showing Method of Assembling Carey Underground System.

Showing Details of Carey Underground System.

CAREY SYSTEM OF INSULATION

For Underground Steam Pipes

Description

The Carey System of insulation for underground steam pipes consists of three essential elements: insulation, expansion rollers, and waterproofing. The heat insulation consists of standard thick 85% Carbonate of Magnesia sectional pipe covering, recognized by engineers as the most efficient steam pipe insulation. In view of the large proportion of pipe surface, compared to radiation surface, in practically any central heating system the necessity of the highest type of pipe covering is apparent. The expansion roller element consists of a compact asbestos roller support having the same outside diameter as the pipe covering, a grooved iron plate accurately fitting within the lower half of the asbestos roller support, and steel balls running within the grooves of the iron plate. The waterproofing consists of a double layer of waterproof Argentum (chemically-treated wool felt) shells applied over the Magnesia covering so that no seams or joints of either layer coincide. A heavy coating of waterproof cement is used between layers and the surface of the outer layer is finished in the same manner. The Argentum shells are cut on one side only and applied by springing over the Magnesia covering. There is only one seam to seal in each Argentum shell, and this permits all work to be done at the top of the covering where it can be satisfactorily inspected.

Specifications

TRENCH.—The pipe trench shall be graded to levels given by engineer with necessary allowances for drainage bed and pipe covering.

DRAINAGE.—A drainage bed of not less than six-inch depth of broken rock shall be provided in the trench. At manholes and low points of the trench install tile drains to sewers or other points below level of trench.

PIPE.—The pipe shall be laid to rest upon blocks or removable supports to a height of approximately one foot above rock drain, to permit pipe covering being applied.

PIPE COVERING.—Apply standard thick 85% Magnesia sectional pipe covering in the usual manner, butting sections closely together and with all seams horizontal. At the end of every five sections (15 feet) of Magnesia covering apply an asbestos roller support with roller plate and balls properly inserted. Over the Magnesia covering and asbestos roller supports apply first course of Argentum shells so that no seams or joints coincide with those of the Magnesia covering. Draw seams tight with a rope in the form of a tourniquet, and staple together at intervals of two inches. Also staple abutting sections together. Apply thoroughly a coat of Carey Universal cement to the outer surface of first course of Argentum shells. Apply the second course of Argentum shells over the first course in the same manner as previously described, breaking all seams and joints with the first course, and finish with a heavy coat of Carey Universal cement. (For moist or marshy ground a final coating of coal tar pitch is recommended.)

ANCHORS.—At intervals specified by the engineer securely attach anchors to the pipe. The pipe covering shall fit as closely as possible to the anchors, and the space between sections shall be filled with 85% Magnesia cement. Over the anchor and extending at least one foot over the pipe covering on each side cast a solid block of concrete of dimensions specified by the engineer.

FITTINGS.—All ells, tees, crosses and pipe bends shall be anchor points. Cover such fittings with 85% Magnesia cement and cast concrete anchor blocks in the same manner as previously described. All expansion joints and valves (and other fittings it may be desirable to include) shall be contained in manholes of dimensions and materials as specified by the engineer. The Argentum shells shall pass through the walls of such manholes and terminate not less than three inches from the inside of the wall.

NOTE.—Where it is necessary to apply insulating covering to two or more pipes in the same trench each pipe is to be covered as indicated in the above specifications.

For pipes over 6-inch nominal size, place large rock slabs or concrete piers under those parts of the pipe covering containing the expansion rollers.

Crude Asbestos.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